Symptom Management

GENERAL PRINCIPLES

Symptom = any functional evidence of disease or of a person's condition
Pain = an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage.[1]

INTRODUCTION

Most individuals living with HIV/AIDS suffer significantly from multiple symptoms, including pain, that are the result of inter-related physiological, psychic changes, and the:

- variable and unpredictable nature of HIV/AIDS
- many concurrent, on-going opportunistic infections
- affects on numerous body systems
- major psycho-social stressors (remember the concept of "total pain/suffering)[2]
- multiple medications, drug interactions and side-effects

Symptoms, including pain, can:

- occur simultaneously
- affect one or more body function(s)/system(s) at a time
- produce excitation or depression
- lead to other symptoms

PREVALENCE

Data collected from two different study populations suggest the prevalence of symptoms in persons living with HIV/AIDS:

Casey House Hospice, Toronto[3]
(100 persons)

Symptom	Prevalence
Anorexia/weight loss	91%
Fatigue/weakness	77%
Pain	63%
Incontinence (urine/stool)	55%
Shortness of breath	48%
Confusion	43%
Nausea/GI upset	35%
Cough	34%
Anxiety/depression	32%
Visual loss	25%
Skin Breakdown	24%
Constipation	24%
Edema	23%
Psych. issues	18%
Skin problems	17%
Seizures	16%
Fever	13%
Potential for skin breakdown	6%
Dysphagia	4%
Agitation	1%

Multi-centre French National Study[4]
(314 persons)

Symptom	Prevalence
Pain	52%
Tiredness	50%
Anxiety	40%
Sleep Disturbance	37%
Mouth sore	33%
Sadness	32%
Weight loss	31%
Nausea	28%
Fever	27%
Cough	27%
Depression	24%
Diarrhea	24%
Skin problem	24%
Pruritis	23%
Respiratory Problem	22%
Vomiting	20%

ASSESSMENT

Symptoms, including pain, are often missed or under-estimated, especially in substance users.

Assessment should include:

- an accurate and thorough history and physical examination:
  - sit comfortably at the same eye level as the person you are talking to
  - use open ended questions
  - listen carefully
  - trust the person's assessment of their symptoms
  - observe facial expressions, body posture and ability to function and interact
  - individualize the use of appropriate measurement tools
- a comprehensive differential diagnosis
- investigations
- frequent reassessment

At all times assessment and investigations should be appropriate for the presentation, stage and context of the person and their illness.

Questions to assess symptoms, including pain, might include:

site	• where is the symptom/pain?
radiation	• does it spread anywhere?
timing	• how long have you had it? • does it come and go? • when it comes, how long does it last? • is it always there? • is there a particular time of the day that is better or worse?
quality	• describe the symptom in your own words
severity	• how severe is it? • on a scale of 0-5 or 0-10, how would you score its intensity/ severity (use visual analogue scale, if possible)?
aggravating factors	• what brings on the symptom/pain? • what makes it worse, i.e. movement, pressure, food? • do several symptoms impact on each other, i.e. pain, nausea, diarrhea, constipation, dyspnea, anxiety?
relieving factors	• is there anything you can do to decrease it?
impact on ADL	• does the symptom/pain disturb your sleep (especially pain)? • does it cause you to be depressed or discouraged? • how has it affected your activities, i.e. your job, recreation, sexual function, meal preparation, dressing, social life, hobbies, etc.?
previous therapy	• which medications or treatments, including complementary therapies, have you tried (ask for the dose, duration, frequency, route of administration)? • which were effective, which ineffective? • did you stop the medication or treatment? If so, why?
adverse effects	• did you experience any adverse or side-effects? If so, what?

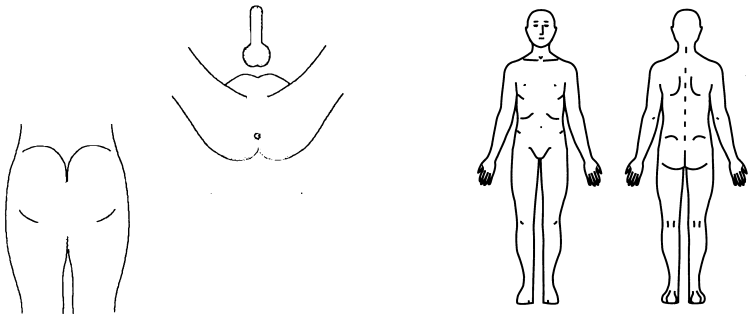
LOCATING THE PAIN[5] ▼

Ask patient to point to area of pain

你感到那處痛楚？

DOVE AVVERTE IL DOLORE?

आप को कहां दर्द होता है?



ONDE É A SUA DOR?

WHERE DOES IT HURT?

LIEU DE LA DOULEUR?

PAIN RATING SCALES[5] ▼

Show chart to patient and ask

你痛楚的程度有多大？

QUANTO È INTENSO IL DOLORE CHE PROVA?

आप का दर्द कितना गम्भीर है?

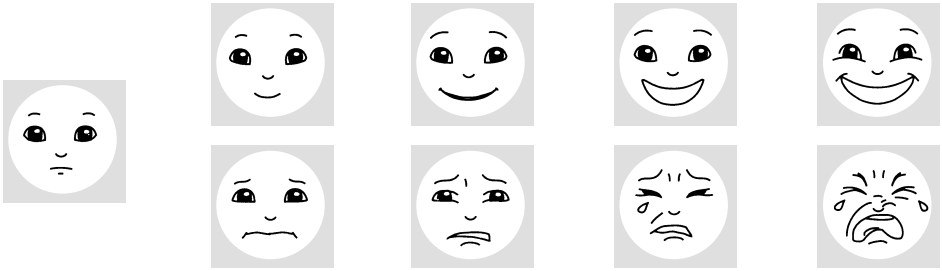
NO PAIN / AUCUNE DOULEUR / 無痛 / NESSUN DOLORE / NÀO HÁ DOR / कोई दर्द नहीं	0	1	2	3	4	5	6	7	8	9	10	WORST PAIN / DOULEUR EXTRÉME / 最痛 / NESSUN DOLORE / NÀO HÁ DOR / सब से अधिक दर्द

QUANTO DÓI?

HOW BAD DOES IT HURT?

INTENSITÉ DE LA DOULEUR?

PAIN RATING FOR CHILDREN 5 YEARS AND OVER[6] ▼



Children are asked to select the face which most closely resembles the distree felt by them during a specific painful procedure. This measurement is not used generally for chronic pain but for acute pain or discrete painful procedures such as injections, lumbar punctures, etc.

Combined with the visual analogue scale for correlation has been sucessful in children over one year of age for charting pain. Use the corresponding number below to chart the face.

5 4 3 2 1

6 7 8 9

MANAGEMENT

Symptoms, including pain, may be:[7]

- reversible if the cause can be treated, i.e. an infection
- non-reversible, if:
  - optimal treatment has already been tried and did not help
  - no direct treatment is available (this is the most relevant in HIV/AIDS)
  - not all treatment options have been accessed, i.e. complementary therapies

At all times, symptom management should strive to:

- be appropriate for the presentation, stage and context of the person and their illness
- enhance perceived "quality of life"
- control all existing symptoms
- offer comprehensive symptom management appropriate to the presentation, stage and context of the person and their illness
- treat the underlying cause(s), where appropriate (refer to *Modules 1–4*)
- anticipate and minimize other potential symptoms and treatment side-effects

As with all therapies, treatment strategies should be individualized and negotiated with each person and his/her family in advance, particularly as some will choose to live with their symptoms rather than risk side-effects from further treatment.

While many symptoms can be successfully managed by competent community care practitioners, as the complexity of the symptoms, medication schedules and potential for drug interactions increases, a skilled interdisciplinary team knowledgeable in various therapies is often required to either consult or take over care in order to achieve optimal results.

Co-ordination of prescribing is essential and can be achieved through collaboration of those prescribing, and the person living with HIV/AIDS, the family and the other caregivers.

ISSUES SPECIFIC TO PAIN[8,9]

PRESENTATION

Pain is:

- always subjective, i.e. what the person says it is and not what others think it ought to be
- an experience that results from the integration of nerve interconnections leading to (afferent) and from (efferent) the areas of the brain responsible for the perception of pain (thalamus and higher cortical centres).[10] The exact components of the nerve pathways, and the neurologic events that produce the experience of pain, are not totally known[9]

CAUSES

The pain that the person experiences:

- is most often initiated by normal stimulation of chemical, pressure, stretch and temperature receptors (nociceptors) found in varying proportions throughout the skin, blood vessels, muscles, connective tissues, periosteum (bone covering), joints, body organs, etc. (**nociceptive** or **visceral pain**)

Pain in HIV/AIDS French National Study (n=163)[4]	
Mechanism	**Prevalence**
Neuropathic	21%
Digestive	17%
Muscular	15%
Infectious	14%
Bone and joint	10%
Iatrogenic	4%
Psychogenic	3%
Tumour	1%
Unknown	5%

- is less frequently the result of abnormal (increased or decreased) nerve function or death. A reduced blood supply (ischemia), irritation, trauma, invasion by tumour or over stimulation may all lead to changes in the electro-chemical function of a nerve, loss of its insulating covering (myelin sheath) or nerve cell death (**neuropathic pain**)
- may be a mixture of nociceptive, visceral and/or neuropathic pains combined (**mixed pain**)
- is influenced by the person's emotions, sense of well-being and/or psychic distress, activity level, cultural and family expectations and experiences (**total pain**)
- may be made worse by movement, including sitting, standing, ambulating, bending, masticating, swallowing, breathing, urinating, and defecation (**movement pain**)
- may be associated with muscle spasm and/or a variety of other symptoms (associated symptoms)

CHARACTERISTICS

- pain may be constant or intermittent
- each person's description of their pain will vary based on past experience, culture, language, etc. The words used below exemplify those frequently chosen:

	Description	**Motor, sensory changes**	**Location**
Nociceptive	aching, gnawing, throbbing	normal cutaneous sensation and motor function	well localized
Visceral	aching, sharp, penetrating	normal cutaneous sensation and motor function	referred to the cutaneous sites that are characteristic of problems with the particular viscera
Neuropathic (nerve compression, irritation which may evolve into nerve damage	sharp, stabbing, "shooting electrical feeling"	usually normal cutaneous sensation, may be decreased motor function	local or distal to area of nerve irritation (dermatomal), more common/usually occurs in long nerve axons first
Neuropathic (nerve damage, infiltration)	burning, tingling, pins and needles	altered cutaneous sensation with hyperalgesia (allodynia) or hypoalgesia (numbness), may be decreased motor function	local and distal to area of nerve damage (dermatomal), more common/usually occurs in long nerve axons first

Allodynia = an area of altered sensation (decreased or enhanced) in an area of cutaneous sensory deficit during an activity or movement that is not normally painful, i.e. light touch of skin, bed sheets moving across legs

MANAGEMENT

The principles of pain management may be applied to the management of any symptom.

ESTABLISH TYPE OF PAIN

- establish whether nociceptive, visceral, neuropathic or mixed
- distinguish between rest and movement pain

USE MULTIPLE APPROACHES

- modify the disease, i.e. antivirals, antibiotics, chemotherapy, radiation therapy, surgery
- modify the perception of the pain, i.e. medications, education, massage therapy, psychological support, relaxation therapy, therapeutic touch
- modify or interrupt pain transmission pathways, i.e. transcutaneous electrical nerve stimulation (TENS), acupuncture, chiropractic, nerve blocks, neurosurgery
- modify lifestyle, i.e. occupational therapy assessment, physiotherapy, homemaking services

PROVIDE STEPWISE ANALGESIA

1. use analgesics in incremental steps. Keep it simple - become familiar with 1 or 2 medications in each step and know them well

Step	Analgesic
1. mild pain	• non-opioids, i.e. ASA, acetaminophen, NSAID's
2. moderate pain	• add a weak opioid, i.e. codeine to the non-opioids
3. severe pain	• replace the weak opioid with a strong opioid, i.e. morphine, hydromorphone, oxycodone, fentanyl, methadone

- don't mix agonists, use one at a time (except when using morphine or hydromorphone to manage breakthrough pain when Fentanyl patches are being used)
- avoid medications with potentially toxic metabolites that have a longer half-life than the parent compound, i.e. meperidine, anileridine
- avoid agonist-antagonists and medications with a high incidence of associated side-effects, i.e. pentazocine
- be aware of ceiling effects with weak opioids such as codeine (upper limit of effectiveness is 200-300 mg/24 hours) and the lack of ceiling effect with strong opioids
- convert from one analgesic to the next and from one route of administration to another using appropriate analgesic equivalents (taking into account the differences in first pass effects and active metabolites, see the *Medication Table, Appendix B*)
- minimize the number of different medications and the number of doses to be taken

ROUTE OF ADMINISTRATION

- **use the least invasive route of administration** i.e. oral tablets or liquids, sublingual, buccal mucosal, suppositories and avoid injections whenever possible
- in the last hours of life, the buccal mucosa is an effective route for administering concentrated liquid opioids. Rarely, parenteral injections or infusion may be preferable if the dose is too high to administer against the buccal mucosa

DOSING

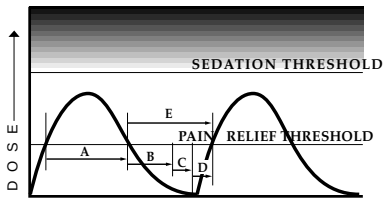
- provide "around the clock dosing" for constant pain at rest, following the basic rules of pharmacology. Never provide prn dosing alone for constant pain
  - initially provide routine doses of immediate release preparations once every half-life, i.e. q4h po or q3h sc for morphine, hydromorphone
  - wait 5 half-lives (until steady state) before increasing the routine dose
- provide breakthrough (prn) dosing for intermittent pain, i.e. extra pain, movement pain
  - initially offer one-half of the routine 4 hourly oral dose every 1 hour (or one-half of the routine 3 hourly sc dose every 30 minutes). Subsequently, increase or decrease the dose based on need
- titrate the dose of medications individually:
  - start at the lower end of the dosing range and work upwards
  - add recurring breakthrough doses into the routine dose once every 5 half-lives, i.e. once per day for most opioids
  - avoid combination medications that limit flexibility
  - never use sustained release products for titration or breakthrough doses
- once the 24 hour dose is stable, minimize the number of doses/day, by using:
  - sustained release preparations, unless there is severe constipation, bowel obstruction or a very rapid transit time, i.e. short bowel syndrome (never cut or crush sustained release tablets), or
  - long acting transdermal medication patches, i.e. Fentanyl (Duragesic®)
- modify the dosing interval for renal failure, particularly in the last hours of life

CONTINUOUS INFUSIONS

- consider a continuous parenteral infusion, preferably sc, only when the person:
  - is unable to swallow
  - is experiencing intractable nausea
  - has a very rapid transit time, i.e. severe diarrhea and may not be absorbing the medication well
  - has too much medication to swallow, i.e., >800-1,400 mg sustained release morphine q8h

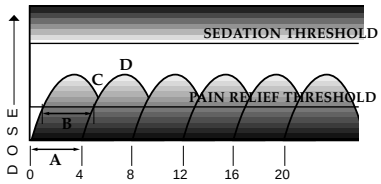
DOSING FOR OPTIMAL PAIN CONTROL[6]

▸ **NEVER PRN DOSING**



A. Pain free interval
B. Pain recurs - patient waits until "needs" to take again
C. Patient waits, after asking, until meds received
D. Patient waits for meds to be absorbed
E. Total time patient is in pain

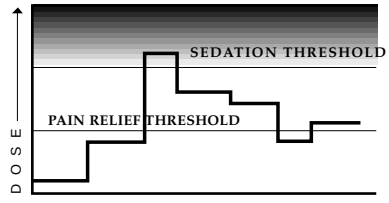
▸ **ALWAYS REGULAR DOSING**



A. Drug half life and frequency
B. Interval of pain relief
C. As one dose fails, the next is rising
D. Peak effect stays below sedation threshold

▸ **Incremental Titration**

Titration is upward over time until there is full pain relief. Once the pain is relieved, careful decreases may be tried if there are side effects.



  - is experiencing a bolus effect, i.e. toxicity after each dose (usually drowsiness) and pain before the next dose
  - has poor pain control and requires rapid titration
  - would otherwise use intermittent im or sc injections (iv infusions should be avoided due to increased tachyphylaxis)
- when changing the route of administration convert the dose appropriately, i.e. for either morphine or hydromorphone: po : parenteral (sc, iv, im) ≈ 2 : 1
- provide breakthrough (prn) dosing for intermittent pain, i.e. extra pain, movement pain
  - initially offer one-half of the routine 1 hour sc or iv dose every 30 minutes. Subsequently, increase or decrease the dose based on need
- sc infusions are safe even with extreme thrombocytopenia. Any bleeding usually occurs when the needle is removed. Apply pressure appropriately

POTENTIAL SIDE-EFFECTS

- anticipate and educate about potential side-effects, i.e. constipation, nausea/vomiting, dry mouth, drowsiness/sedation, confusion/delirium, urinary retention, twitches/jerks/myoclonus, respiratory depression (rare)
- be prepared to lower the opioid dose significantly if delirium presents along with fever/sepsis (delirium due to a relative opioid excess may be the first sign of sepsis, preceding even the fever)
- know how to manage opioid overdose:
  - if breathing rate is acceptable, hold further opioid, push fluids and wait for the metabolites to clear
  - if breathing rate is too low, administer naloxone appropriately (see *Appendix B, Medication Table*)

ADJUVANT MEDICATIONS

- consider NSAID's for inflammation or visceral pain i.e. arthritis, pleurisy, peritonitis, organomegaly with capsule stretch (ensure adequate cytoprotection, hydration, renal and platelet function)
- steroids may also have a role, but must be considered carefully in light of their potential to further suppress immune function in those who are already compromised
- nitrous oxide or ketamine (Ketalar®) may be useful for painful manoeuvres, movement or painful dressing changes
- see specific pain sections for other adjuvant therapies

COMPLEMENTARY THERAPIES

The holistic approach that is so much a part of Palliative Care has been integral to the "complementary therapies" for centuries. "Complementary therapies" include a variety of natural-based remedies and techniques (see page 32) and are often referred to as "alternative therapies" to indicate their distinction from standard medical practices. However, the term "complementary therapy"

emphasizes the fact that these remedies and techniques can be used in conjunction with allopathic, pharmaceutical treatments to lower medication dosages, reduce symptoms or side-effects or even substitute for other medications altogether. As favourable results have been suggested with a wide range of complementary therapies, you are encouraged to seek further information.[11]

EDUCATE

- provide ongoing teaching and support about:
  - choice of medications
  - dosing schedules
  - use of breakthroughs for routine vs. extra/movement pain
  - potential side-effects and strategies for their control
  - issues of addiction, dependence, and tolerance

CHILDREN

There are a number of issues in the management of symptoms, including pain, in infants and children which are different from adults, and require special consideration and consultation, when appropriate:

ASSESSMENT

- children do not complain in the same way as adults do
- the stage of cognitive development affects the expression and presence of symptoms and signs (and the understanding of treatment)
  - caregivers need to be educated about the interpretation of symptoms and signs
- observation may have to replace self-reporting in very young children who are unable to communicate effectively:
  - observational rating scales need to be age appropriate
  - a consistent caregiver should do the observations wherever possible
- children may have intense fears of separation and of procedures. This may affect assessment

MEDICATION ADMINISTRATION

- children may not be able to swallow pills or tolerate intramuscular injections
- many drugs are not commercially available in appropriate pediatric doses or dosage forms:
  - your pharmacy may be able to make special liquid preparations appropriate for your situation
- compliance may be a significant problem:
  - getting children to take oral medication may be difficult
  - developmental factors may lead to poor compliance
- myths about pharmacotherapy in children need to be dispelled to avoid under-treatment

DOSING

- the doses of most drugs need to be adjusted according to body weight
- immature metabolism in infants may necessitate lower dosages
- faster elimination may result in the need for relatively higher doses than in adults
- with some medications, idiosyncratic toxicity may occur in young children, i.e. valproic acid
- fixed-dose combinations may be best avoided if they do not allow for optimal dosing of each component medication
- experience with medications in children is often quite limited and the optimal dosing and range of toxicity may not be known

OTHER THERAPIES

- medication should be combined with other interventions including:
  - play, stories, games to refocus attention/distract
  - breathing/relaxation exercises
  - imagination/self-hypnosis to reduce pain

PERSONS LIVING WITH HEMOPHILIA AND HIV/AIDS[12, 13]

Hemophilia is a sex chromosome (X) linked genetic disorder resulting in reduced quantities or absence of specific blood clotting proteins:

- Hemophilia A = Factor VIII deficiency
- Hemophilia B = Factor IX deficiency

As a result, bleeding, generally into joints and muscles, occurs when there is minimal to severe trauma, or when surgery or an invasive procedure is performed. To stop the bleeding, missing clotting factors must be replaced by intravenous infusion of factor concentrates.

Between 1979 and 1985, 850 Canadians living with Hemophilia became infected with HIV through the use of concentrates manufactured from HIV infected blood. While blood donor screening and viral inactivation procedures virtually eliminated HIV from factor concentrates prepared in Canada by 1985, tragically in 1987, another 10 Canadian hemophiliacs were infected through imported factor concentrates that were contaminated. Since mid-1987, even though human plasma remains the source for concentrates of Factor IX and some of the Factor VIII (recombinant sources for Factor VIII are replacing the human sources), there have been no further reports of contamination or infection.

As Hemophilia is genetically transmitted through the X chromosome from mother (unaffected carrier) to son (affected), one or more male members of the family are likely to be affected. Given the penetration of the genetic defect, some families are living with, or have lost, several members of their family who have been infected with HIV/AIDS.

COMPLICATIONS

pain	• multiple bleeds into joints may lead to joint damage, arthritis and pain • ensure that pain is well controlled, encourage analgesics prior to activity (see Arthralgia/Myalgia-hemophilia and Bleeding-hemophilia)
bleeding	• when bleeding occurs, replacement factor must be given promptly and in adequate doses (see Bleeding-hemophilia)
impaired mobility	• impaired mobility can be due to: – bleeding into joints and muscles – joint deformity – arthritis – joint replacements – decreased muscle strength, weakness and fatigue • to improve mobility: – encourage the person to voice his/her own physical limitation related to activity – allow for adequate rest periods – organize a safe environment to promote independence and to prevent injury – provide appropriate assistive devices – ensure that available orthotic devices or special shoes are used when ambulating
other blood transmitted viruses	• the presence of Hepatitis B and C has seriously compromised the health of those living with hemophilia/HIV. A high frequency of liver impairment may be further complicated by cirrhosis or hepatoma and may have implications for the use of anti-retrovirals and other medications • the risk of bleeding may be increased further as the liver fails to produce other clotting factors and as the bone marrow fails to produce adequate platelets. Bleeding may occur spontaneously into mucous membranes, soft tissues and the brain.

To ensure optimal care of the patient with hemophilia and HIV/AIDS, close collaboration with the hemophilia comprehensive care centre must be maintained.

HIV+ SUBSTANCE USERS

When we discuss the client-centered care model, it is important to consider both harm reduction and options (see *HIV+ Substance Users in Palliative Care*) . Harm reduction within this model takes into consideration medication which will probably reduce the harm caused by other substances being used. The following examples may be taken into consideration:

	ISSUES FOR SUBSTANCE USERS	OPTIONS
opioids (codeine, morphine, heroin, hydromorphone, methadone, pentazocine)	• higher tolerance to morphine derivatives	• increase dose • shorten interval between doses (following principles of pharmacology) • choose a morphine derivative that acts selectively with other receptors, i.e. replace morphine with methadone (see below)
	• hepatic failure	• monitor dosages carefully to avoid overdosing and consequent side-effects
	• withdrawal	• treatment of symptoms (clonidine, benzodiazapines, anti-spasmodics, anti-inflammatories) • increase methadone by 10mg q 1-2 days until withdrawal symptoms disappear
	• drug interactions - phenytoin, rifampin and rifabuton (Mycobutin®) increase elimination of methadone	• increase methadone doses to compensate
	• drug interactions - simultaneous use of agonist and antagonist or agonist/antagonist, i.e. pentazocine, can rapidly provoke withdrawal symptoms	• avoid mixing medications
Benzodiazepines (Valium®, Librium®, Ativan®, Halcion®, etc.)	• higher tolerance to benzodiazepines	• increase dose • shorten interval between doses (following principles of pharmacology) • use longer-acting benzodiazepines
Alcohol	• cross-tolerance to benzodiazepines	• increase dose of benzodiazepines • shorten interval between doses of benzodiazepines (following principles of pharmacology) • use longer-acting benzodiazepines
	• hepatic failure	• the pharmacokinetics of certain medications can be altered. Adjust dosages and dosing intervals appropriately
Cocaine	• withdrawal	• use longer-acting benzodiazepines

	• hepatic failure	• the pharmacokinetics of certain medications can be altered. Adjust dosages and dosing intervals appropriately
	• withdrawal	• use benzodiazepines for acute withdrawal • bromocriptine or amantadine to reduce the craving
Methadone	• Methadone is a potent opioid analgesic that demonstrates incomplete cross tolerance with other Mu-opioid receptor agonist analgesics. Although there has been no research into the palliative use of methadone in the opioid tolerant person with pain and HIV/AIDS, conversion of the opioid tolerant person with cancer-related pain to methadone has suggested that methadone may represent an important therapeutic option for the management of this difficult problem.[14] It is strongly recommended that more research be conducted into the use of methadone in Palliative Care in an effort to provide an optimum quality of life by minimizing potentially harmful medications.	
Medicinal THC, (cannabis)	• although the use of cannibis satova is illegal, some who have used it previously, refuse to stop using it as they feel it reduces their nausea and stimulates their appetite, especially when these symptoms are problems in HIV/AIDS. Synthetic cannabinoids may provide effective alternatives (see *Symptom Management* – Anorexia/cachexia, Asthenia, and Nausea/vomiting/retching and *Appendix B, Mediciation Tabl*e)	

As can be seen by the above examples, choices and harm reduction strategies are available, though further research is necessary in order to effectively judge their merits.

OTHER SYMPTOM MANAGEMENT ISSUES

Symptoms other than pain share management issues similar to those for pain. Use the symptom management and medication tables as a reference guide to refresh your current knowledge and stimulate the acquisition of new treatment strategies, not as a cook book.

In the sections that follow:

- emphasis is placed on the management of adults. However, except as noted earlier in this section and in the text that follows, the overall strategies are similar for infants and children. You are also encouraged to refer to *Module 2: Infants, Children, Youth*
- when reviewing the lists of potential presentations and causes for each symptom, remember that many may be occurring/ present simultaneously
- multiple medications have been included with brief prescribing information. More detailed dosing information for adults, appropriate dosing for infants and children, potential side-effects and drug interactions may be found in the *Appendix B, Medication Table* and in the references
- For the most part suggestions for consultations have not been included. Become familiar with the resources in your area and consult them when needed.

COMPLEMENTARY THERAPIES

ACUPUNCTURE

Acupuncture is an ancient Chinese treatment involving the insertion of very fine sterile needles into the body at specific points according to meridian charts (pathways of energy). It is used by many people to control painful conditions such as headaches, arthritis and low back pain, as well as non-painful problems such as allergies and withdrawal symptoms when stopping drugs or cigarettes. Although often used on its own, it is more authentically used when it is part of an overall program of traditional Chinese medicine which incorporates an intricate theory and practice involving pulse diagnosis, balancing of element/ organ relationships, and the use of herbs.

AROMATHERAPY

Aromatherapy is the therapeutic use of natural oils extracted from flowers, seeds, roots and fruits. Aromatherapists are trained to choose an oil appropriate to the need, i.e. certain odours can relax, stimulate or help to alleviate depression. They are generally applied as part of a massage therapy session, used in the bath, or taken by inhalation.

CHIROPRACTIC

Chiropractic is a method of care which employs manipulation of the spine, pelvis and other articulating joints to restore mobility, ease pain and stimulate the body's own balancing of function. In addition to manipulation, practitioners may employ massage, stretching techniques, electrotherapy to facilitate the treatment.

HOMEOPATHY

Homeopathy is an approach to health based on the principles developed by Dr. Samuel Hahnemann in Germany in the 1790's. By administering very diluted doses of one of 2,000 natural substances which in their raw form would either cause , or in some way reflect the person's complaint, a re-balancing of energy is achieved which markedly alleviates the symptoms. Remedies can be prescribed for rapid, drug-free action on acute symptoms, or for more chronic or constitutional complaints. In both cases this approach recognizes the interaction of physical, emotional and spiritual components in health.

MASSAGE THERAPY

Massage therapy is a healing art comprised of specific techniques designed to promote circulation, enhance lymphatic flow and ease musculoskeletal pain. Treatments are either full-body or area-specific and generally involve the use of oils, creams or powder. Massage can help to maintain skin durability (particularly at pressure points over bony prominences), aid in respiration, allay symptoms of abdominal cramping and nausea, and above all, afford a relaxed sense of well-being.

SHIATSU

Shiatsu is a Japanese word meaning "finger pressure", although in actual treatments thumbs, palms and elbows are also used. It is based on the Chinese theory of medicine which identifies meridian lines which relate to the internal organs. According to the principles of Oriental medicine, when energy becomes blocked or sluggish, systemic imbalances and various symptoms can occur. By applying sustained pressure along the meridians, the Shiatsu therapist stimulates the body's healing abilities.

THERAPEUTIC TOUCH

Each person has localized energy fields which extend beyond the body. In health, life energy flows freely throughout the body. In disease, these energy fields get blocked or depleted. Through therapeutic touch techniques, the therapist "tunes into" blocked areas by detecting a change in temperature which indicates a blocked energy field. The therapist directs life energy into the person to restore balance within the body.

Symptom Management

GENERAL PROBLEMS

ANOREXIA/CACHEXIA, ASTHENIA

Anorexia = lack or loss of appetite

Asthenia = lack or loss of strength and energy, including fatigue, lassitude, generalized weakness

Cachexia (wasting) = a state of malnutrition characterized by a significant loss of body weight, adipose tissue and muscle mass

Generalized weakness = the anticipatory subjective sensation of difficulty initiating activity

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PRESENTATIONS

May include:

- anorexia
- cachexia, particularly of fat and muscles
- fatigue, lethargy
- nausea (chronic)
- peripheral edema (associated with hypoalbuminemia)
- asthenia
- muscle pain, spasm, weakness
- drowsiness
- pallor
- areas of skin erythema or breakdown

CAUSES

Infectious:

- HIV wasting syndrome
- opportunistic infections (all causes)

Malignant:

- Kaposi's sarcoma
- lymphoma
- squamous cell carcinoma

Other:

- anemia
- economic or social debilitation making self care difficult
- malabsorption including lactose intolerance
- medication side effects (including chemotherapy)
- psychological
- reduced dietary intake

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- reduce medications where possible
- space out activities over time
- practice energy conservation (occupational therapy)
- encourage active and passive exercises (physiotherapy)
- if bed-dependent, turn q2h
- provide support for loss of body image, self esteem (see *Activities of Daily Living*)

PROBLEMS	INTERVENTIONS
altered taste	• choose foods that address preference for salt or sweet • may wish to increase seasoning, marinate foods • drink more fluids
anemia	• transfuse to correct anemia, if symptomatic, particularly if hemoglobin <75. May improve exertional fatigue for mobile individuals. Transfuse HIV + individuals with CMV negative blood
anorexia	To stimulate appetite: • try small quantities of alcohol before meals (not in children) • megestrol acetate 40 mg od-160 mg tid (doses up to 800 mg/24 hrs may be useful, particularly in early HIV/AIDS. May be very expensive. • steroids: (in decreasing order of choice) – prednisone 10-40 mg po od or dexamethasone 1-4 mg po od-q6h – nandrolone 25-50 mg im q1wk – nandrolone decanoate 50-100 mg im q3-4wks – depo-testosterone 200-400 mg im q3-4wks • consider homeopathy: alfalfa tincture 8-10 drops in 70 mls water ac tid
autonomic dysfunction, postural hypotension	• ensure adequate hydration • mobilize slowly • fludrocortisone 100 μg po od-bid • steroids as above
difficulty taking and/or keeping oral fluids and foods[15]	• may be due to dysphagia, odynophagia, nausea/vomiting/retching, reflux, regurgitation, head/neck pain and/or problems • to improve esophageal peristalsis and gastro-esophageal sphincter tone: – metoclopramide 5-10 mg po, im, iv tid-qid, 1/2 hr ac + hs, or – domperidone 5-20 mg po, tid-qid, 1/2 hr ac + hs, or – cisapride 5-10 mg po tid-qid, 1/4 hr ac + hs or 20 mg po bid • consider naso-gastric, gastric or jejunal tube feeding, especially if dysphagia is reversible • total parenteral nutrition may improve nutrition and serum albumin in early illness and selected cases (not useful in end-stage HIV/AIDS) - see Dehydration
reduced nutritional intake or increased metabolic need (i.e. tumour)[16]	• assess dietary needs and preferences, nutrition consult may be helpful • choose high caloric and/or high protein fluids and foods • vitamin supplementation • commercial caloric and/or protein supplements (can be diluted with water or ice chips, especially if difficult to swallow or producing diarrhea) • pay attention to food presentation and feeding: – prepare small frequent meals – choose food of a consistency which is palatable, easy to chew and swallow

	– use appropriate feeding technique, i.e. feed on the same level, let the person take the food, do not rush – provide appropriate environment, socialization to stimulate eating, accompany the person while eating
malabsorption	• maintain lactose free diet or use lactase enzyme tablets • elemental enteral feeding supplements (isotonic, 30% fat, medium chain triglycerides)

COMPLEMENTARY THERAPIES

- acupuncture may boost energy
- aromatherapy:
  - for energy, mixtures of bath oils can be made by aromatherapist
- Swedish massage
- therapeutic touch
- traditional Chinese medicine

ARTHRALGIA, MYALGIA

***Arthralgia* =** pain in joint(s)

***Myalgia* =** pain in muscle(s)

PRESENTATIONS

May be a constant achiness in one or more joints or muscles. May get worse with activity.

CAUSES

ARTHRALGIA

Infectious:
- infective arthropathies

Other:
- joint stiffness from lack of movement
- other arthropathies:
  - osteoarthritis
  - psoriatic arthritis
  - rheumatoid arthritis

MYALGIA

Infectious:
- HIV myositis
- drug induced
  - AZT
  - cotrimoxazole

Other:
- denervation:
  - muscle spasm
- flexion contractures
- medication side-effects
- night-time leg cramps
- non-specific manifestation of a systemic viral infection

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- reduce the risk of joint stiffness, muscle spasm, contraction flexures, and position fatigue, by keeping joints and muscles warm and moving, through intermittent active or passive exercise

PROBLEMS	INTERVENTIONS
pain, joint stiffness	• NSAID's may reduce pain, joint stiffness due to inflammation - see Pain - stepwise analgesia • chiropractic for musculoskeletal pain • homeopathy: – for aching muscles, arnica cream topically – for stiff joints, Rhus toxicodendron 30 ch bid qam and qhs
bleeding in hemophilia[12, 13]	• where there is an increase in, or a new site of pain, bleeding must be considered • to manage pain due to bleeding into joints or muscles: - manage associated bleeding (see Bleeding - hemophilia) - ice may be used to relieve the initial pain and reduce swelling - provide stepwise analgesia (see Pain) • **do not use ASA** as this binds irreversibly with platelets • NSAID's may be needed, however, they should be used with caution as they interfere with platelet function (reversibly) and are potentially dangerous in hemophilia • where parenteral medications are required, use only the iv or sc routes of administration. **Do not give im injections** as they may induce bleeding
muscle spasm	• for neurologically related spasm: – diazepam 5–10 mg po q6–8h prn – dantrolene (Dantrium®), start with 25 mg po od, increase by 25 mg per day up to 25–50 mg po bid-qid – baclofen, start with 5 mg po tid, increase q3 days up to 20 mg po tid if required • for musculo-skeletal related spasm: – diazepam 5-10 mg po q6–8h prn – cyclobenzaprine (Flexeril®) 10 mg po bid-qid – orphenadrine (Norflex®) 100 mg po bid or 60 mg im, iv bid (for acute skeletal muscle spasm) – methocarbamol (Robaxin®) 6–8 g po od for 2–3 days, then reduce to 500-1000 mg po tid-qid • aromatherapy: for muscle tension, rosemary and lavender used in massage
night-time leg cramps	• quinine sulphate 200–300 mg po qhs prn

COMPLEMENTARY THERAPIES

- acupuncture
- Swedish Massage

BLEEDING

Hematuria = blood in the urine

Petechia = small, round, non-raised purplish red spots caused by intradermal or submucosal hemorrhages

Ecchymosis = extravasation of blood under the skin

Hemoptysis = coughing up blood or blood stained sputum

Purpura = area(s) of confluent petechiae or ecchymosis

PRESENTATIONS

May include:

- bleeding problems specific to hemophilia
- bruising
- hematuria
- petechia
- upper and lower GI bleeds, including oral cavity
- bleeding tumour(s)
- ecchymosis
- hemoptysis
- purpura

Bleeding problems specific to persons with hemophilia:[12, 13]

Minor Bleeding Episodes

- early bleeding into joints or muscles
- prolonged nose bleeds or severe gum bleeding
- urinary bleeding lasting more than several days (check with the attending physician first)

Major Bleeding Episodes

- advanced joint or muscle bleeding
- neck, tongue or throat hematoma
- following head injury, with or without symptoms
- following severe physical trauma
- severe abdominal pain
- gastrointestinal bleeding (vomiting blood, bleeding through rectum, or black, tarry stools)
- any bleeding that suggests nerve entrapment
- psoas muscle bleed

CAUSES

Infectious:

- pneumonia
- TB
- UTI
- sepsis

Malignant:

- Kaposi's sarcoma
- squamous cell carcinoma
- lymphoma

Other:

- hemophilia
- hepatic dysfunction (all causes)
- thrombocytopenia
  - HIV related ITP
  - ITP
  - other
- trauma

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- consider misoprostol prophylaxis 100–200 µg po q12h–q6h in persons who will use NSAID's, steroids and have a history of bleeding, gastritis or severe anorexia/cachexia
- use standard principles for the management of bleeding:
  - maintain good hydration
  - transfuse to maintain appropriate hemoglobin, hematocrit, coagulation, platelet count. Use CMV negative blood/ plasma in those who are HIV +
  - consider vitamin K_1 injections 10 mg iv or fresh frozen plasma

PROBLEMS	INTERVENTIONS
hematuria, urinary tract infection (UTI)	• maintain good urinary output • minimize local trauma, i.e. catheter • irrigate bladder to remove clots
thrombocytopenia	• AZT (refer to *Module 1*) • prednisone 40-60 mg po od for 1-2 weeks then taper to maintenance dose • transfuse platelets only if required (rare) • consider splenectomy, as a last resort if it will enhance symptom control and the prognosis warrants it
medication related bleeding	• discontinue responsible medication(s) • if NSAID related – initiate misoprostol 200µg po q6h – consider covering gastric ulcers with sucralfate 1 gm po q6h 1 hr ac+hs • if associated gastritis, consider antacids (see Odynophagia-hyperacidity) • if duodenal bleeding, consider H_2 receptor inhibitors – Ranitidine® 150 mg po bid or 50 mg iv tid – Omeprazole® 20-40 mg po od
skin and tumour bleeding	• manage small bleeding sites with silver nitrate sticks • more extensive bleeding may require the application of: – topical thrombin 1,000–5,000 units sprayed on bleeding site (Thrombostat®) – Kaltostat™ dressing – epinephrine 1:1000 dabbed or sprayed on bleeding site – absorbent pressure dressings • if risk of large bleeds, warn family and caregivers of potential risks and develop a clear management plan which may include: – removal of family from the room – use of red or coloured towels • provide adequate analgesia, sedation
problems specific to hemophilia[12, 13]	• take special precautions to minimize the risk of falling, especially in those who are weak and fatigued • where there is an increase in, or a new site of pain, bleeding must be considered • to manage bleeding: – ensure that a supply of the appropriate factor is kept in your local blood bank and the person's home (obtainable from the local Red Cross) – when bleeding occurs, infuse the clotting factor over 5 minutes through a 22 guage medicut or 25 guage butterfly needle, then flush the line with 25 mls of N/S and discontinue the iv access. As each unit of Factor VIII / kg body weight increases the factor concentration by 2%, and each unit of Factor IX / kg body weight increases the factor concentration by 1%: (see next page)

1. for **Hemophilia A** and:
   - **minor bleeds**, infuse 15 units of Factor VIII / kg of body weight to increase the factor concentration by 30%
   - **major bleeds**, infuse 25 units of Factor VIII / kg of body weight to increase the factor concentration by 50%
   - **head injuries**, infuse 50 units of Factor VIII / kg of body weight to increase the factor concentration by 100%
2. for **Hemophilia B** and:
   - **minor bleeds**, infuse 20 units of Factor IX / kg of body weight to increase Factor IX concentration by 20%
   - **major bleeds**, infuse 40 units of Factor IX / kg of body weight to increase Factor IX concentration by 40%
   - **head injuries**, infuse 70 units of Factor IX / kg of body weight to increase Factor IX concentration by 70%

– as Factor VIII has a half-life of 8-12 hrs and Factor IX has a half-life of 12-24 hrs, a second infusion may be necessary within 12-24 hrs if bleeding continues

- to reduce the risk of bleeding, especially where there is a risk of seizures (that could lead to injury), consider infusing the missing factor 2-3 times per week prophylactically
- manage associated pain (see Arthralgia, Myalgia/hemophilia)
- where parenteral medications are required, use only the iv or sc routes of administration. **It is advisable not to give im injections** as they may induce bleeding. Depending on the severity of hemophilia, im injections in severe hemophilia may require Factor VIII/IX before and several days after the injection

DEHYDRATION

Anuria = no urine output

Oliguria = reduced urine output, usually dark in colour

Poor skin turgor = reduced fullness of skin, increased wrinkling, often dry, flaking

Xerostomia = dryness of mouth from lack of normal secretions

PRESENTATIONS

May include, even in the presence of ascites, peripheral or pulmonary edema:

- anuria
- asthenia
- fatigue
- light-headedness, dizziness, orthostatic hypotension
- poor skin turgor
- thirst
- xerostomia

CAUSES

Other:

- reduced fluid intake
- fluid loss due to sweating, fever, diarrhea, nausea and vomiting, etc.
- hypoalbuminemia

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- always check for postural hypotension
- carefully monitor fluid intake and output
- address issues that are limiting fluid intake or causing excess fluid losses
- reduce elevated body temperature (see Fever)
- **do not overhydrate**, especially in the cachectic person with hypoalbuminemia (monitor skin turgor and minimize ascites, peripheral and pulmonary edema)
- the syndrome of inappropriate anti-diuretic hormone secretion (SIADH) and other electrolyte imbalances may occur in HIV/AIDS

PROBLEMS	INTERVENTIONS
dehydration with normal albumin (normal oncotic pressure)	To rehydrate • initially, replace intravascular volume with salt and fluids, then • replace free water and continue to correct electrolyte imbalances • do not over-hydrate
dehydration with hypoalbuminemia (reduced oncotic pressure)	To rehydrate • initially, carefully replace intravascular volume with salt and fluids. With a lower albumin, you will need less salt and fluid replacement, then • carefully replace free water • do not over-hydrate (watch closely for peripheral and pulmonary edema) • it may not be possible to correct electrolyte imbalances
hypoalbuminemia	• increase protein intake (if possible) • albumin infusions are not appropriate. The infused albumin is rapidly catabolized and does not correct hypoalbuminemia

HYDRATION TECHNIQUES

Rehydration may be accomplished by several routes of administration:

ROUTE OF ADMINISTRATION	SALT SOURCES	FLUIDS WITH MINIMAL SALT
oral	• club soda, soups, "red" vegetable juices, i.e. tomato, V8, commercial salt and fluid replacement solutions (sport and medical) • extra salt on foods • popcorn, potato chips, nuts • do not push salt intake to the point that it is nauseating	• soft drinks, juices (other than "red" vegetable juices), water, mineral waters • tea, coffee and alcohol are diuretics
intravenous	• normal or half-normal saline (N/S) • Ringer's lactate • others	• dextrose and water • half-N/S • 1/3 saline, 2/3 dextrose and water • others

ROUTE OF ADMINISTRATION	SALT SOURCES	FLUIDS WITH MINIMAL SALT
subcutaneous (hypodermoclysis) – inject 150 units of hyaluronidase at the needle site before starting infusion (optional) – then infuse 1,000–1,500 mls per 24 hours, rate as tolerated	• N/S	• not used for sc rehydration
rectal – route of last choice – not indicated with diarrhea, anal or rectal problems – insert small pediatric feeding tube pr – then instill 250 mls q1h up to 500 mls and wait several hours before repeating	• warm N/S	• not used for rectal rehydration

LAST HOURS	INTERVENTION
dehydration[17]	• iv/sc hydration is only useful if condition is reversible and should **not** be started during the last hours of living unless there is a clear indication for it • isotonic dehydration may be protective as increased ketones may induce some anesthesia • the individual will suffer from dehydration: – if free water consumption leads to hyponatremia (may produce nausea) – if mucous membranes dry out and become painful – if feeling thirsty • rehydration may settle terminal delirium if dehydration is a factor • see Dysphagia
dry mucous membranes	**Eyes** • keep conjunctiva moist with: – artificial tears or N/S 2 drops each eye q1h prn, especially when eye is open, or – ocular lubricant, i.e. Lacri-lube™ • the eye lid may not be able to close properly when the eyeball sinks back into its socket, (as the fat behind the orbit disappears in extreme anorexia/cachexia) **Lips and Nares** • reduce evaporation from exposed mucous membranes by applying a thin layer of petroleum jelly or other moisturizer, i.e. Secaris™ q1h prn (caution: avoid petroleum products with plastic tubing, i.e. nasal prongs)

dry mucous membranes	**Mouth and Teeth** • keep moist and clean using baking soda mouthwash q30-60 min prn (1 tsp baking soda, 1 tsp salt, 1 quart tepid water) • avoid commercial mouthwashes • do not insert fingers beyond the teeth (avoid bites) • apply mouthwash and any medications with sponge swabs • avoid lemon-glycerine swabs (while these are stimulating in the individual who can produce saliva, the glycerol is desiccating and the lemon irritating in the individual with xerostomia) • cover oral ulcers with topical anesthetics • dab candida with mycostatin suspension • a humidifier may reduce drying (be careful not to increase risk of respiratory infections)

EDEMA, LYMPHOEDEMA, ASCITES

***Edema* =** accumulation of excessive fluid in extracellular spaces

***Lymphoedema* =** accumulation of excessive lymph fluid in extracellular spaces

***Ascites* =** accumulation of excessive serous fluid in the abdominal cavity

PRESENTATIONS

May appear in:

- abdomen
- conjunctiva
- genitals
- head/neck
- back
- feet and legs
- hands and arms
- lungs

Edema of subcutaneous tissues may be **pitting** (due to serous fluid leakage from blood vessels) or **non-pitting** (due to chronic lymphatic fluid leakage from blocked lymphatic drainage channels).

CAUSES

PITTING PERIPHERAL EDEMA

Malignant:
- Kaposi's sarcoma
- lymph node obstruction

Other:
- congestive heart failure (CHF)
- dependent (postural) edema
- hypoalbuminemia
- over-hydration
- thrombosis
- venous insufficiency
- venous obstruction

NON-PITTING PERIPHERAL EDEMA

Malignant:
- Kaposi's sarcoma
- lymphoma

ASCITES

Malignant:
- Kaposi's sarcoma
- lymphoma

Other:
- CHF
- hypoalbuminemia
- liver congestion
- over-hydration

PULMONARY EDEMA

Other:
- CHF
- over-hydration
- uremia

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- manage salt and fluid balance carefully, do not over-hydrate
- elevate and/or carefully support edematous and dependent part(s) of the body to move fluids and reduce risk of skin breakdown (see Skin care/problems)

PROBLEMS	INTERVENTIONS
ascites	• diuretics may be helpful if albumin is not too low. Start gently and increase dose as appropriate: – spironolactone 50–250 mg po od-bid and/or – furosemide 20–120 mg po od (caution: excessive diuresis may produce postural hypotension, especially in presence of hypoalbuminemia) • consider paracentesis if symptomatic (abdominal discomfort or pain, dyspnea, orthopnea) and appropriate for the stage of the illness
non-pitting edema	• elevate and support edematous and dependent limbs • protect skin, especially at points of contact (see Skin Care/problems) • manage concurrent pitting edema • steroids may reduce obstruction causing edema: – dexamethasone 1–8 mg po, iv, im sc q6h • consider prophylactic measures to reduce risks of deep vein thrombosis and pulmonary embolism, i.e. heparin 5,000 units sc bid-tid
pitting edema	• elevate and support edematous, dependent limbs • protect skin, especially at points of contact • diuretics may be helpful if albumin is not too low. Start gently and increase dose as appropriate: – spironolactone 50–250 mg po od-bid – furosemide 20–40 mg po, iv od • use Tedd™ stockings to compress edematous legs • if there is no skin breakdown consider using a sequential lymphoedema pump, i.e. Lymphopress™ to move fluids • consider prophylactic measures to reduce risks of deep vein thrombosis and pulmonary embolism, i.e. heparin 5,000 units sc bid-tid
pulmonary edema	• manage cough, shortness of breath (see Cough, Dyspnea) • use appropriate cardiac medications to manage arrhythmias, CHF, ischemia • diuretics: – furosemide 20–240 mg po, iv prn, or – ethacrynic acid 50–200 mg po, iv • oral nitrates or nitro paste may enhance peripheral venous dilatation • administer oxygen, as appropriate • avoid over-hydration

COMPLEMENTARY THERAPIES

- massage therapy may help move fluids around (use caution on thin, fragile or leaking skin)

FEVER

***Fever* =** increased body temperature greater than 37.5°C (99.5°F) oral or groin, 38.0°C (100.5 °F) rectal or 37.0°C (98.5 °F) axilla. May result from bacteria and their endotoxins, viruses, yeasts, antigen-antibody reactions, drugs, tumour products or other exogenous pyrogens affecting the thermoregulatory control centres in the hypothalamus.

PRESENTATIONS

May include:

- asthenia
- dehydration
- light-headedness, dizziness
- chills, rigors
- delirium
- sweating, night sweats

CAUSES

Many different causes (refer to Fever and/or night sweats, *Module 1*).

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- maintain hydration (see Dehydration)
- manage sweating (see Skin Care)
- manage confusion (see Delirium)
- if delirium present, consider reducing opioid dosage

APPROACHES	INTERVENTIONS
reduce body temperature	• acetaminophen or ASA 325–650 mg po, pr q6-8h prn • NSAID's may be used with caution, especially with neoplastic fever, i.e. ibuprofen 200–400 mg po q4h prn
reduce skin temperature	• remove excessive bed coverings and/or clothing • avoid plastic bed coverings • cool room and move air over the person (open windows, fan) • bathe skin (cool water, ice water, or alcohol in extremes)

COMPLEMENTARY THERAPIES

- homeopathy: belladonna 6 ch qid ac + hs, increase to 30 ch bid, if needed

NEUROLOGICAL PROBLEMS

NEUROPATHIC PAIN

PRESENTATIONS

- see Symptom Management, Pain Characteristics

CAUSES

One of the most common causes of pain in advanced HIV/AIDS.

Infectious:

- direct involvement of the nerve with HIV or CMV
- post herpetic neuralgia

Other:

- certain chemotherapeutic agents
- superimposed medical or metabolic processes, including alcoholism

Malignant:
- Kaposi's sarcoma
- lymphoma
- squamous cell carcinoma

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- educate about the difference between pain on movement and pain at rest
- if contact with skin produces increased pain, look to methods for minimizing such contact, i.e. positioning, bed cradles to keep bedding off legs/feet

PROBLEMS	INTERVENTIONS
pain due to nerve damage, infiltration	• provide stepwise analgesia (see Pain) • tricyclic anti-depressants (TCA's), i.e. amitriptylline, desipramine, imipramine may be effective and enhance the effect of opioids: – start with 10-25 mg at bedtime for 3-5 days – if no adverse effects, increase in 10-25 mg increments every 3-5 days up to 75-150 mg/24 hours – maximal response may take 2-4 weeks • local anaesthetics, membrane stabilizing antiarrhythmics (do not combine with TCA's) – mexiletine: • start with 100 mg q8h, increase 100 mg q8h every 3 or more days as needed – flecainide: • start with 50 mg po q12h, increase 50 mg q12h every 4 or more days as needed • capsaicin 0.025-0.075% cream, apply to affected areas tid-qid
pain due to nerve compression, irritation	• provide stepwise analgesia (see Pain) – carbamazepine: • start with 100-200 mg po q12h, increase to 100-400 mg po tid-qid, monitor therapeutic plasma levels – valproic acid: • start with 125 mg po q8h, increase to 250-1,000 mg po q8h as needed – phenytoin • start with 100 mg po q8h, monitor therapeutic plasma levels to modify dose as needed – clonazepam: • start with 0.5 mg po q12h, increase to 0.5-3.0 mg po q8h as needed

COMPLEMENTARY THERAPIES

- acupuncture
- chiropractic: lumbar manipulation
- homeopathy: hypericum 6 ch qid + hs, increase to 12 ch tid ac, then 30 ch bid if effectiveness diminshes
- massage therapy
- TENS may provide additional relief, however it is unpredictable
- therapeutic touch

SEIZURES, MYOCLONIC JERKS

***Myoclonic jerks* =** random shock-like contractions or twitches of a portion of a muscle, an entire muscle or a group of muscles in one or more parts of the body

PRESENTATIONS

May include:

- focal motor seizures
- grand mal seizures
- myoclonic jerks

CAUSES

Infectious:
- encephalitis (all causes)
- meningitis (all causes)
- toxoplasmosis

Malignant:
- lymphoma, cerebral

Other:
- medication excess or withdrawal:
  - neuroleptics
  - benzodiazepines
  - opioids
- medication side-effects:
  - foscarnet
- metabolic:
  - hypoglycemia
  - hypoxia
  - Na, K, Ca, Mg imbalance
  - uremia
- substance use

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- reduce potential for harm to the person:
  - maintain the airway
  - position on side to minimize the risk of aspiration
  - provide oxygen if available
  - protect from physical injury (but not necessarily restrain)
  - reduce external stimuli
- rehydrate, especially if myoclonic jerks are secondary to opioid build-up (see Dehydration)
- reduce or discontinue all medications that are producing CNS excitation or lowering the seizure threshold

PROBLEMS	INTERVENTIONS
seizures	• to control acute seizures – diazepam 10 mg iv, pr q5–10 min prn – lorazepam 3-4 mg iv, sc q 5–10 min prn – midazolam 1-5 mg iv, im, sc q1h prn – phenobarbital 60–120 mg iv, im, pr q10–20 min prn
seizure prophylaxis	• use phenytoin, carbamazepine or other anti-epileptic medications in loading and maintenance doses appropriate for the person (require therapeutic blood level monitoring) (see *Medication Table, Appendix B*) • if there is hypoalbuminemia, phenytoin doses may need to be reduced

LAST HOURS	INTERVENTIONS
seizures	• as swallowing deteriorates, oral medications for seizure prophylaxis may become more difficult, or impossible, to administer • lorazepam placed against the buccal mucosa with a few drops of water will provide ongoing prophylaxis, (midazolam sc could also be used) • phenytoin (standard doses of parenteral solution) may also be administered pr • phenobarbital 60-120 mg iv, im, pr q10-20 min prn

VISUAL LOSS

PRESENTATIONS

May present as loss of central or peripheral vision (dark shadows encroaching from the edges) or blurring of vision.

CAUSES

Infectious:
- CMV retinitis
- herpes simplex or zoster
- PML
- pneumocystis
- toxoplasmosis

Other:
- dehydration
- ischemia
- hemorrhage
- vestibular problems

Malignant:
- lymphoma, cerebral

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

Examination and investigation must be undertaken quickly. Many conditions may lead to permanent blindness, and require an urgent ophthalmologic consultation, particularly as the associated lesions are often difficult for the untrained examiner to see:

- to prevent blindness, continue therapy (particularly for CMV retinitis) until irreversible loss of consciousness has occurred, i.e. ganciclovir, foscarnet (refer to *Module 1*)
- provide early intervention by Canadian National Institute for the Blind (CNIB) or similar agency to help allay fears, and familiarize person with orientation, mobility and rehabilitation teaching possibilities
- provide counselling and psycho-social support as this is a devastating condition
- provide a familiar environment, remove hazards, i.e. floormats and obstacles
- provide assistive devices, i.e. “talking” clocks, special watches with time one can touch

HEARING LOSS

Tinnitus = a noise in the ears including ringing, buzzing, roaring, clicking

PRESENTATIONS

May present with a hearing deficit, loud speech, difficulty understanding conversations, tinnitus

CAUSES

Infectious:
- encephalitis
- oral candida
- otitis externa and media
- PML
- sinusitis

Malignant:
- Kaposi's sarcoma, external ear

Other:
- chemotherapeutic agents, i.e. vincristine
- eustachian tube dysfunction
- coincidental
- external ear blockage i.e. wax

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- consider anti-histamines or decongestants, if appropriate
- provide hearing aids
- utilize sign language as appropriate (interpreter)

LOSS OF MOTOR/SENSORY FUNCTION

PRESENTATIONS

May include:
- altered reflexes
- areas of muscle weakness, loss of muscle function/wasting
- areas of sensory abnormality or loss

CAUSES

Infectious:
- CMV myelopathy
- encephalitis (all causes)
- HIV encephalopathy or myelopathy
- meningitis
- toxoplasmosis
- PML

Malignant:
- Kaposi's sarcoma (peripheral effects)
- lymphoma (central or peripheral effects)

Other:
- medications:
  - AZT, ddI, ddC
  - chemotherapy
- diabetes
- alcohol

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- consider physical aids to enhance activities of daily living (see *Activities of Daily Living*)
- consider active and passive exercise
- maintain good skin care (see Skin care/problems)

NEURO-PSYCHIATRIC PROBLEMS

DEMENTIA

The term *dementia* is used interchangeably with *HIV encephalopathy*. It is also known as AIDS dementia complex (ADC).

Dementia may be related to HIV (direct cause) or it may be the result of another infection, a space occupying lesion or a metabolic imbalance (indirect cause).

PRESENTATIONS

Early dementia	Late dementia	Very late dementia
• blunted affect • decreased concentration • forgetfulness • mental slowing • short term memory loss	• apathy • disorientation • fatigue • generalized weakness • hypomania • loss of balance • night time delusions • psychomotor retardation • sundown syndrome • tremors • vacant stare • wandering • withdrawal	• confusion • dysarthria • incontinence • mutism • seizures

CAUSES

Infectious:
- HIV
- other opportunistic infections

Other:
- PML
- delirium
- prolonged depression

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- continue only essential medications
- a trial of methylphenidate 5-20 mg po qam has cleared mild dementia
- manage associated agitation (see Delirium)
- provide a protective, safe, structured environment
- keep familiar objects in visible proximity
- establish daily routines including regular activity and sleep times
- reduce external stimuli, i.e. noise, conversations not specifically directed to the person
- consider competency (see *Legal Issues*)
- provide as much control as possible
- make instructions clear, simple
- minimize number of caregivers
- monitor finances, spending habits
- occupational therapy

PROBLEMS	INTERVENTIONS
orientation	• calendar • clock • night lights • explanations • have caregivers and visitors identify themselves regularly • label cupboards, drawers and containers
safety	• use a sensory pad • attach a call bell • observe frequently • raise side rails (caution: may increase agitation. May lead to an accident if person attempts to climb over them) • use a room monitor, i.e. baby monitor • see *Activities of Daily Living*
psychomotor retardation/ somnolence	• methylphenidate 5-20 mg po q4h. Avoid late afternoon and evening doses as these can interfere with sleep at night time. Occasionally, doses late in the day can keep the person alert for visitors or pleasurable activities (Do not use if person is delirious or agitated)
HIV encephalopathy	• anti-retrovirals (AZT, ddI, ddC) may protect against or reverse HIV-related dementia

COMPLEMENTARY THERAPIES

- aromatherapy
- art therapy
- massage therapy
- music therapy
- therapeutic touch

DELIRIUM, DECREASED LEVEL OF CONSCIOUSNESS, TERMINAL DELIRIUM

PRESENTATIONS

May include:

- agitation
- bad dreams, nightmares
- decreased level of consciousness, somnolence (often fluctuating)
- disorientation
- hallucinations or other perceptual disturbances
- hypervigilance
- moaning, groaning
- reduced concentration
- restlessness
- short term memory difficulties
- sleep/wake cycle reversal

Moaning and groaning may be the result of partial closure of the vocal cords due to stress during the dying process. They are rarely the result of pain, unless they have been present prior to the onset of delirium.

May be related to psycho-social or spiritual distress. Pain, even in the unconscious person, is usually associated with furrowing of the brows and/or signs of tension across the forehead

CAUSES

Depression:
(some are associated with agitation, delusions, hallucinations, memory impairment)

Hypomania/mania:
- manifestation of a pre-existing bipolar disorder

Psychosis:
- brief reactive
- schizophrenia
- other etiology

Other:
- HIV encephalopathy
- opportunistic infections, sepsis
- increased intracranial pressure
- medications: side effects and/or withdrawal, including
  - benzodiazepines
  - opioids
  - anti-cholinergics
- metabolic abnormalities including hepatic or renal failure
- hypoxia
- environmental changes, i.e. hospitalization, ICU
- fecal impaction
- urinary retention

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- continue only essential medications. Discontinue any that could cause delirium
- provide familiar environment, orient frequently, enhance safety (see Dementia)

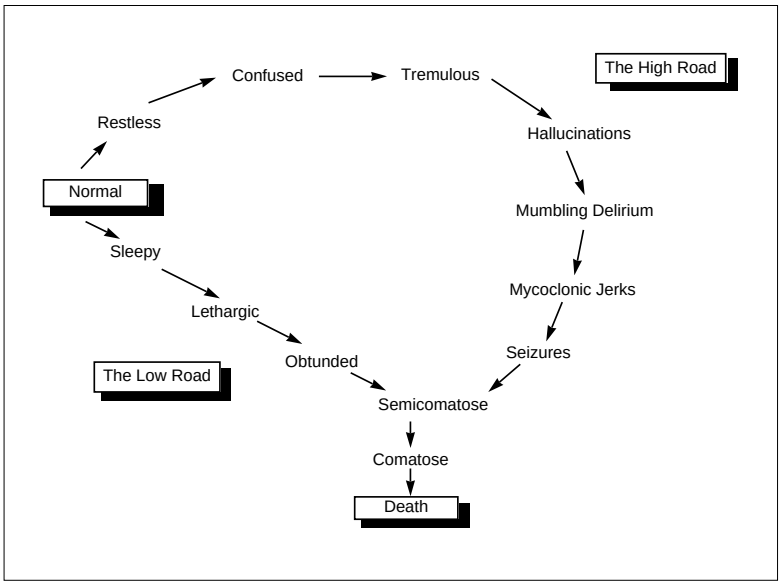
PROBLEMS	INTERVENTIONS
agitation, restlessness, psychosis	• neuroleptics may help to re-organize thought patterns as well as provide sedation • choice of drug depends largely on familiarity • start with smallest possible doses: – haloperidol 0.5 mg po, im, sc; thioridazine 10 mg po; loxapine 2.5 mg po, im; chlorpromazine 10 mg po, pr, im – adjust upward as necessary. Frequent dosing may be necessary until control is achieved – once under control, reduce total daily acute dose by 25-33% and divide daily maintenance dose into 2-3 doses/24 hrs – be aware of potential side-effects: • **higher potency**, i.e. haloperidol, perphenazine, are associated with extrapyramidal side-effects • **lower potency**, i.e. thioridazine, chlorpromazine, are associated with more sedation and anti-cholinergic side-effects • **mid potency**, i.e. loxapine, trifluoperazine, provide a balance • in severe agitation, iv haldol can provide rapid relief with few side-effects: – haloperidol 0.5-2 mg iv, infuse at 1 mg/min, repeat q30min until person is calm – if agitation is particularly severe, may add lorazepam 1-2 mg iv • use anti-cholinergics as necessary for side-effects i.e. Benztropine

COMPLEMENTARY THERAPIES

- homeopathy: arsenicum 30 ch bid to decrease anxiety and enhance "letting go"
- massage therapy
- music therapy
- therapeutic touch

THE TWO ROADS TO COMA[18]

In the dying, coma and death may ensue along 2 different trajectories.



The low road is a hypo-active state where the person slips quietly into a coma and dies peacefully. The high road is a hyper-active state consistent with terminal delirium.

LAST HOURS	INTERVENTIONS
terminal delirium	• irreversible, cannot treat the underlying causes, so focus on settling the person • goals in managing terminal delirium include: – muscle relaxation, including reduction of moaning/groaning – reduction of anxiety – reduction of risk of seizures – inhibition of the perception of the last hours of living • benzodiazepines may settle terminal delirium and/or induce sedation: – lorazepam 1-4 mg against buccal mucosa q1h prn (pre-dissolved in 0.5-1.0 mls of water) even in the person who is unconscious and/or unable to swallow. Doses of 20-50 mg per 24 hours may be required in individuals who are very restless – midazolam 1-5 mg sc, im, iv q3h prn or by continuous infusion • haloperidol, chlorpromazine and methotrimeprazine may also be useful, but im injections may be too painful in the cachectic person (haloperidol, methotrimeprazine could be administered sc)

- where terminal delirium is extreme or sedation is difficult to achieve with benzodiazepines, phenobarbital or sodium thiopental (Pentothal®), may be required to settle the person. This should be discussed in detail with the family prior to initiating therapy:
  - phenobarbital 100-130 mg iv, im q6h or by continuous infusion 1-5 mg/hr (starting with lowest dose and titrating upwards until sedation is achieved)
  - sodium thiopental, consult with an anesthetist
- educate the family about the causes and significance of terminal delirium, particularly the distressing features, i.e. moaning/groaning
- maintain good mucous membrane and skin care (see Dehydration, Skin care/problems)
- do not measure blood pressure, heart or respiratory rate unnecessarily
- discontinue blood work, x-rays
- measure oxygen saturation only if necessary, no blood gases

COMPLEMENTARY THERAPIES

- music
- gentle massage
- therapeutic touch

DEPRESSION

PRESENTATIONS

May include:

- agitation
- crying
- lack of pleasure
- suicidal ideation
- apathy
- guilty ruminations
- sadness
- withdrawal

May also include neuro-vegetative symptoms (less helpful in the severely medically ill):

- decreased appetite
- insomnia (or hypersomnia)
- decreased energy
- weight loss

CAUSES

Other:

- dementia
- medication
- medical illness:
  - acute infection
  - system failure

Note:

- attempt to distinguish dysphoria associated with losses from a more severe clinical depression. Even a "reactive" depression can become a major depression and warrant pharmacological treatment:
  - index of suspicion will be high if guilty ruminations, apathy, withdrawal are present
- diagnosis is difficult due to diagnostic criteria (refer to *DSM-IV*) which rely on neuro-vegetative symptoms that are invariably disrupted in severe medical illness
- diagnosis is important as appropriate intervention may improve quality of life considerably

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- reduce doses of medication if possible
- eliminate unnecessary medications
- provide a familiar, safe, protective environment (see Dementia)
- consider supportive and/or insight oriented psychotherapy

PROBLEMS	INTERVENTIONS
clinical depression	• choice of medication depends on presentation and side-effect profiles: – early tricyclic anti-depressants, i.e. doxepine, imipramine, are sedating and have risk of anticholinergic side effects including constipation, xerostomia – newer tricyclic anti-depressants, i.e. nortriptyline, desipramine, have fewer side effects than other older antidepressants, and offer advantage of monitoring blood levels – newer anti-depressants, i.e. sertraline, fluvoxamine, can be stimulating and have risk of agitation/restlessness, GI upset or sleep disturbance – trazadone can be sedating with less risk of other side effects – avoid fluoxetine due to long half life • start with half usual adult starting dose, increase slowly, expect response only after two or more weeks on a therapeutic dose: 1. tricyclic anti-depressants including desipramine, doxepine, imipramine, nortriptyline: – start with 10–25 mg po od-tid and increase in 25 mg increments, if no side-effects, up to a max of 100–200 mg in 1–3 doses/24 hrs (max 100 mg/24 hrs for nortriptyline only) 2. serotonin re-uptake inhibitors including sertraline and fluvoxamine: – start with 50 mg po od and increase if no side-effects up to 150–200 mg/24 hrs (wait at least 7 days between increments) 3. trazodone: – start with 50 mg po od and increase if no side-effects up to 150–200 mg/24 hrs (wait at least 7 days between increments)
psychomotor retardation/ somnolence	• methylphenidate 5–20 mg po q4h, avoid late afternoon and evening doses as these can interfere with sleep: – helpful in the medically ill. Rapid but likely a limited response

COMPLEMENTARY THERAPIES

- homeopathy:
  - nat mur 30 ch bid for deep sadness, with blocked emotions, anger
  - iamara (ignatia amara) 30 ch bid for emotions

ANXIETY

PRESENTATIONS

May include:

- agitation
- insomnia
- restlessness
- sweating
- tachycardia
- hyperventilation
- panic
- shaking
- sympathetic discharge
- worry

CAUSES

Other:

- delirium
- medication effects
- hallucinations

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- provide a familiar, safe, environment (see Dementia)

PROBLEMS/APPROACHES	INTERVENTIONS
anxiety	• medication choice depends on desired half-life: – longer half-life: more sustained effect, but may accumulate – shorter half-life: risk of withdrawal and rebound anxiety • lorazepam and oxazepam are not metabolized in the liver and are a better choice in presence of hepatic failure • consider possibilities of withdrawal if stopped abruptly, i.e. agitation, rebound anxiety, delirium: – long half-life: • clonazepam 0.25–2 mg po q12h • diazepam 2–10 mg po q8h – moderate half-life: • lorazepam 0.5–2 mg po, sl q6-8h – short half-life: • alprazolam 0.25–0.5 mg po bid-tid, max 3 mg/24 hrs (particularly for panic attacks and nightmares) • oxazepam 15–30 mg po q4-6h • chloral hydrate 500–1,000 mg po qhs • diphenhydramine 25–50 mg po, iv tid-qid • zopiclone (Imovane®) 7.5 mg po qhs • homeopathy: – anxiety attacks, aconitum 6 ch tid, if recurrent or acute 30 ch prn – generalized anxiety, arsenicum 30 ch bid – high anxiety, argentum nitricum 30 ch bid
anti-depressants	• anti-depressants may be very helpful, i.e. trazodone

COMPLEMENTARY THERAPIES

- acupuncture: raises endorphin levels, sedates
- aromatherapy: general calming effect, see practitioner for appropriate aromatherapy oils (melissa, bergamot, lavender, neroli):
  – warm baths and oils
- biofeedback
- chiropractic: specific cervical and thoracic manipulation to enhance parasympathetic outflow
- hypnosis
- imagery
- massage therapy
- relaxation therapy
- therapeutic touch: general calming effect

INSOMNIA

PRESENTATIONS

May include:

- difficulty falling asleep
- frequent awakenings
- nightmares
- early morning awakening
- night-time restlessness
- fear

CAUSES

Other:

- anxiety disorder
- depression
- pain
- delirium
- medication side effects

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- give corticosteroids in the morning to reduce interference with sleep
- look for reversible symptoms which cause discomfort at night time

APPROACHES	INTERVENTIONS
enhance environment	• reduce noise • control light • improve comfort of bed • adjust ambient temperature and humidity • provide comforting objects i.e. teddy bears
establish sleep routines	• reduce daytime napping • go to bed at the same time each night • reduce stimulation 2 hours before sleeping • wake at same time every morning
remove dietary stimulants	• avoid caffeinated medications and beverages, i.e. coffee, tea, soft drinks • avoid alcohol at bedtime
anxiolytics	• choice depends on half-life: – short: may lead to withdrawal, arousal – long: may result in daytime sleepiness, hangover or impaired cognition. However, may provide anxiolytic effect during the day • do not use nightly: – avoids attenuation effect – reduces potential for dependency • abrupt stoppage may lead to rebound insomnia • effective doses may be very small in the elderly • dosing: – lorazepam 0.5–2 mg po, sl qhs prn – oxazepam 15–30 mg po qhs prn – diazepam 2–5 mg po qhs prn – alprazolam 0.25–0.5 mg po qhs prn
anti-depressants	• low doses of sedating anti-depressants may be very helpful over long term: – amitriptyline, desipramine, doxepin 10–25 mg po qhs – trazodone 25–50 mg po qhs
other sedatives	• diphenhydramine 25–50 mg po qhs prn • dimenhydrinate 25–50 mg po qhs prn • chloral hydrate 500-1,000 mg po qhs prn • zopiclone (Imovane®) 7.5 mg po qhs prn

COMPLEMENTARY THERAPIES

- aromatherapy: see practitioner for specific oils
- guided meditations, imaging
- herbal treatments, soothing teas

- homeopathy: coffea 12 ch bid in evening spaced 3 hrs apart before bedtime, allow 4 days to assess, increase to 30 ch, if needed
- massages
- relaxation therapies:
  - progressive muscle relaxation
  - self hypnosis
  - focused muscle relaxation
- therapeutic touch
- warm milk, Ovaltine™

CARDIO-RESPIRATORY PROBLEMS

CHEST PAIN

PRESENTATIONS

May occur at rest, on movement, on exertion, on inspiration. May be generalized or localized and may be specific to one or more dermatomes.

CAUSES

Infectious:
(including pericarditis, pleurisy, pneumonia)
- atypical mycobacterium (MAC)
- CMV
- fungi
- herpes zoster
- pneumocystis carinii
- pyogenic bacteria
- TB

Malignant:
- Kaposi's sarcoma
- lymphoma

Other:
- costochondritis
- ischemia
- musculoskeletal
- pneumothorax
- pulmonary embolism
- trauma

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- distinguish between non-esophageal and esophageal pain (see Odynophagia)
- pain on inspiration, exertion may indicate rib subluxation

PROBLEMS	INTERVENTIONS
chest wall inflammation, trauma, pericarditis, pleurisy	• provide stepwise analgesia, especially NSAID's (see Pain) • if costochondritis, consider local steroid/xylocaine injections • for extreme, chest wall pain consider nerve block
herpes zoster	• acute - provide stepwise analgesia (see Pain) • chronic - see Neuropathic Pain
ischemia	• use appropriate cardiac medications - nitroglycerin, nitrates, calcium channel blockers, beta blockers • provide stepwise analgesia (see Pain)
pneumothorax	• manage acutely with chest tube and suction, if appropriate • provide stepwise analgesia (see Pain)

COMPLEMENTARY THERAPIES

- chiropractic assessment and treatment
- TENS
- physiotherapy
- therapeutic touch
- acupuncture for musculo-skeletal pain

COUGH

PRESENTATIONS

May include:

- areas of pulmonary dullness
- crackles
- stridor
- gagging, retching
- hemoptysis
- bronchospasm (wheezing)
- intercostal indrawing
- tachypnea
- cough induced nausea, vomiting

CAUSES

Pulmonary:

- bronchospasm
- embolism
- effusions
- Kaposi's sarcoma
- obstruction
- opportunistic infections
- pneumothorax

Cardiac:

- CHF with pulmonary edema
- ischemia

Other:

- allergy
- chemical and mechanical irritants
- psychological, i.e. anxiety

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- distinguish between productive and non-productive cough
- reduce allergans, irritants, i.e. smoking
- elevate to semi-sitting position
- provide abdominal splints for persistent coughing episodes
- manage associated bronchospasm (see Dyspnea)

PROBLEMS	INTERVENTIONS
cough	• suppress with: – dextromethorphan hydrobromide 15–45 mg po q4h prn – opioids: • codeine 15–60 mg po q4h prn (even when taking another opioid for pain management) • hydrocodone 5-10 mg po q4-6h prn • hydrocodone and phenyltoloxamine complex (Tussionex®) 5 mls or 1 tablet q8–12h prn • morphine 5–20 mg po q4h prn (may be increased further) • normethadone and hydroxephedrine compound (Cophylac®) 15 drops po bid prn – Nabilone 1-2 mg po bid-tid-qid (max 6 mg/24 hrs) prn
hyperactive gag reflex	• nebulized lidocaine 5 mls of 2% solution (100 mg) q3-4h prn • reduce associated anxiety (see Anxiety)

increased quantity or difficulty clearing airway secretions	• maintain adequate hydration • keep mucous membranes moist • increase humidity in the room (be careful not to increase risk of respiratory infections) • try nebulized saline to loosen thick secretions • postural drainage • massage/respiratory physiotherapy • oropharyngeal or nasopharyngeal suction only if absolutely necessary (very stimulating) – scopolamine 0.3–0.6 mg sc q4–8h prn or scopolamine (Transderm-V®), patch 1-2 behind alternating ears q72h – glycopyrrolate (Robinul®), 0.1-0.4 mg im, iv q4-6h prn (non-sedating)

COMPLEMENTARY THERAPIES

- acupuncture
- aromatherapy - eucalyptus, pine, benzoin oils to chest
- massage, gentle clapping on back to move sputum

DYSPNEA, RESPIRATORY DISTRESS

PRESENTATIONS

Person may feel short of breath before there are objective signs which may include:

- areas of pulmonary dullness
- crackles
- inability to clear secretions
- stridor
- bronchospasm (wheezing)
- cyanosis, central or peripheral
- intercostal indrawing
- tachypnea

CAUSES

Pulmonary

- asthma
- effusions
- embolism
- hypertension
- infections:
  - opportunistic
  - other
- Kaposi's sarcoma
- obstruction
- pneumothorax

Cardiac:

- CHF with pulmonary edema
- ischemia

Other

- anemia
- ascites
- fatigue
- neuromuscular:
  - myelopathy
- psychological:
  - anxiety
  - depression

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- respond quickly
- elevate head of bed
- keep air moving using fans, open windows (avoid excessive cooling)
- reduce environmental irritants, i.e. smoking
- minimize number of people in the room
- teach and support family
- manage associated anxiety (see Anxiety)

PROBLEMS	INTERVENTIONS
bronchospasm	• salbutamol 2–3 puffs q4-8h (with aerochamber) or 2.5–5.0 mg diluted to 4.0 mls with saline up to q4h via nebulizer • ipratropium bromide (Atrovent®) 2-3 puffs q 4-8 h prn • steroids: – prednisone 10–60 mg po od – dexamethasone 1–8 mg po, iv, im, sc q6h • racemic epinephrine 2–3 puffs q4–6h
hypoxia	• use oxygen judiciously. It is not essential to reduce the sense of being short of breath, and may not be effective by itself • compressed air may be as effective as oxygen • oxygen only indicated if % saturation <90% • if oxygen is used, exercise clinical judgment. Measure % oxygen saturation, not arterial blood gases, unless absolutely necessary • monitor % oxygen saturation to establish ongoing need for oxygen therapy
obstruction	• steroids: – prednisone 10–60 mg po od – dexamethasone 1–8 mg po, iv, im, sc q6h • racemic epinephrine 2–3 puffs q4–6h
pleural effusion	• thoracentesis • for recurrent effusions: – talc or tetracycline poudrage/pleuradesis – insert Tenchkoff™ catheter for repeat drainage
pulmonary edema	• careful salt and fluid management • appropriate cardiac medications • diuretics: – furosemide 20–240 mg po, iv prn – ethacrynic acid 50–100 mg po, iv od-bid • nitrates or nitro paste to enhance peripheral venous dilation
respiratory distress	• for opioid naive: – morphine 5–15 mg po, pr, sl, sc, im, iv q1–4h prn or – hydromorphone 1–3 mg po, pr, sl, sc, im, iv q1–4h prn • for persons already taking opioids: – increase dose of same opioid by 25–100% q4h. • nebulized opioids may be helpful: – preservative free parenteral solutions of morphine 10–40 mg or hydromorphone 2–20 mg diluted to 3-4 mls with saline q4h may be very effective (type of nebulizer may improve delivery) • for associated anxiety: – benzodiazepines (always adjust based on response to previous doses): • lorazepam 0.5–2.0 po, sl, buccal mucosal q1h prn • diazepam 5–10 mg po qid prn • clonazepan 0.25-2.0 mg po q12h prn • midazolam 1–5 mg sc q3h prn or 0.5-2.0 mg q1h sc infusion – nabilone 1–2 mg po bid-tid prn • for extreme distress: – use doses as above, but deliver parenterally only, or – a combination of morphine (doses as above), scopolamine 0.3–0.6 mg in the same syringe sc as a stat dose may also be very effective. May repeat in 5–10 minutes – midazolam 5-10 mg sc, repeat q10 min until settled

secretions, increased quantity or difficulty clearing	• to reduce quantity of secretions: – scopolamine 0.3–0.6 mg sc q4–8h prn or scopolamine (Transderm-V®) patch 1-2 behind alternating ears q72h – glycopyrrolate (Robinul®) 0.1–0.4 mg im, iv q4–6h prn (non-sedating) • maintain adequate hydration • keep mucous membranes moist • increase humidity in the room (be careful not to increase risk of respiratory infections) • try nebulized saline to loosen thick secretions • postural drainage • massage, respiratory physiotherapy • oropharyngeal or nasopharyngeal suction only if absolutely necessary (very stimulating)

LAST HOURS OF LIVING	INTERVENTIONS
respiratory failure	• a significant change in the person's breathing pattern, i.e. Cheyne-Stokes breathing, or short, shallow respirations, is one of the cardinal signs that death is occurring • focus on treating the sense of shortness of breath, clearing or reducing secretions while continuing to treat underlying causes, if possible • oxygen may prolong death rather than improve quality of life, and may not be appropriate. Use it judiciously • provide ongoing teaching or support for those at the bedside, particularly if the dyspnea is perceived as being distressing

COMPLEMENTARY THERAPIES

- acupuncture
- aromatherapy - eucalyptus, pine, benzoin oils to chest
- therapeutic touch

HICCUPS

PRESENTATIONS

May be very distressing, especially if ongoing or out of control.

CAUSES

- cerebral tumour
- gastric distension
- renal insufficiency
- diaphragmatic irritation/ irritability
- phrenic nerve irritation

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- reduce or discontinue medications that may be causing CNS excitation, i.e. opioids

PROBLEMS/APPROACHES	INTERVENTIONS
central suppression	• chlorpromazine 25-50 mg po, pr, im, iv q4-6h prn • for cerebral tumours may also try: – phenytoin 200-300 mg po, iv od – carbamazepine 100-200 mg po bid-tid – valproic acid 250 mg po bid-qid

increase pCO2	• 5% CO_2 by face mask at bedside • breath holding • re-breathing, i.e. supervised use of paper bag
pharyngeal stimulation	• granulated sugar with lemon juice • nasal catheter • stimulation of pharynx with finger and cotton ball
gastric distention	• anti-flatulants • antacids, standard doses q2h prn • naso-gastric tube suction • peristaltic stimulation to facilitate gastric emptying, including: – metoclopramide 10 mg iv stat, then 10 mg po q6h prn – mint water, peppermint tea
other medications	• nifedipine 10–20 mg po, sl q8h or 30–60 mg po od (sustained release) (observe for hypo-tension) • baclofen 5–20 mg po bid-tid • steroids: – prednisone 10-40 mg po od – dexamethasone 2-8 mg po, iv, im, sc q6h

COMPLEMENTARY THERAPIES

- acupuncture
- chiropractic
  - manipulation of C 3, 4, 5
  - manual diaphragm release
- therapeutic touch

HEAD AND NECK PROBLEMS

HEADACHE

Meningismus = stiff neck due to meningeal irritation/pain.

PRESENTATIONS

Pain occurs in one or more locations across the head, including the sinuses. May radiate into ear(s), eye(s), mouth, neck. May change with movement and be associated with meningismus.

CAUSES

Infectious:
- encephalitis:
  - cryptococcal
  - HIV
  - herpetic
- herpes zoster
- meningitis (all causes)
- sinusitis
- toxoplasmosis

Malignant:
- lymphoma

Other:
- torticollis/muscle spasm
- cervical spondylosis
- diagnostic test, i.e. lumbar puncture
- intoxication or substance withdrawal, i.e. alcohol, caffeine
- medications
- migraine
- tension
- therapeutic interventions

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- treat migraines using conventional medical therapy
- provide stepwise analgesia (see Pain)
- NSAID's may reduce meningismus
- corticosteroids may reduce edema around space occupying lesions and may control severe meningismus:
  - prednisone 10-80 mg po od
  - dexamethasone 1-8 mg po, iv, im, sc q6h

COMPLEMENTARY THERAPIES

- acupuncture
- chiropractic manipulation may relieve headache of cervical and suboccipital musculoskeletal origin
- aromatherapy
- homeopathy: numerous symptom specific interventions
- massage therapy
- relaxation therapy
- TENS
- therapeutic touch

HEAD AND NECK PAIN

PRESENTATIONS

Includes pain occurring in the ear, nose, oral cavity (mouth), pharynx (throat) and larynx.

May change with movement including chewing or swallowing. May be associated with meningismus.

CAUSES

Infectious:

- candida
- chelitis
- dental abscess, decay
- gingivitis
- herpes simplex
- herpes zoster
- pharyngitis
- parotitis
- tonsillitis
- ulcers:
  - aphthous
  - others

Malignant:

- Kaposi's sarcoma
- squamous cell carcinoma

Other:

- malnutrition
- medications:
  - chemotherapy
- radiation therapy
- stones
- trauma
- temporomandibular joint syndrome

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

PROBLEMS	INTERVENTIONS
pain	• analgesics: – provide stepwise analgesia (see Pain) – NSAID's may be particularly helpful
painful oral/pharyngeal lesions	• anesthesia: – lidocaine 2% viscous, 5-15 mls rinse mouth, gargle, then spit out or swallow. May mix 1:1 with Magnolax® to make more palatable (max. 15 mls q3h, 120 mls q24h) – benzydamine oral rinse (Tantum®)15-30 mls tid-qid rinse mouth, gargle, 15 secs then spit (may also spray into mouth) – oxethazaine, aluminum and magnesium hydroxide mouthwash (Mucaine®) 15-30 mls tid-qid, rinse mouth, gargle, 15 secs then swallow – caution: risk of aspiration within 1 hr of use • steroids: – prednisone 5–60 mg po od – dexamethasone 1–2 mg po q6h • triamcinolone apply to oral lesions tid-qid after meals

COMPLEMENTARY THERAPIES

- acupuncture
- relaxation therapy
- therapeutic touch

HEAD AND NECK PROBLEMS

Halitosis = bad breath

Mucositis = mucous membrane inflammation

Rhinorrhea = free discharge of thin nasal mucous, runny nose

Sialorrhea = excessive salivation

Includes problems occurring in the ear, nose, oral cavity (mouth), pharynx (throat) and larynx.

PRESENTATIONS

May include:

- altered taste
- halitosis
- mucositis
- receding gums
- sialorrhea
- tooth decay
- bleeding
- masses
- oral lesions, ulcerations (including gum)
- rhinorrhea
- xerostomia

CAUSES

Infectious:

- candida
- chelitis
- dental abscess, decay
- gingivitis
- herpes simplex

Other:

- malnutrition
- medications:
  - chemotherapy
- radiation therapy
- stones
- trauma

Infectious (cont.)
- herpes zoster
- pharyngitis
- parotitis
- tonsillitis
- ulcers:
  - aphthous
  - others

Malignant:
- Kaposi's sarcoma
- squamous cell carcinoma

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

PROBLEMS	INTERVENTIONS
altered taste	• explore food preferences, choose foods that address desire for salt or sweet • increase seasoning, marinated foods • drink more fluids
gingivitis	• 0.2% chlorhexidine oral rinse or brushing tid
halitosis	• oral and dental hygiene as below • maintain adequate hydration • hydrogen peroxide 1% gargles
hygiene	• brush teeth regularly • use mouthwashes q2-3h prn: – baking soda – 1 tsp baking soda + 1 tsp salt in 1 quart of water – chlorophyll in isotonic solution, 1 dropper to 8 oz. water – 1/3 N/S, 1/3 hydrogen peroxide, 1/3 Cepacol®, mouthwash – do not use over-the-counter mouthwashes that contain alcohol, as they may be irritating • Moistir® spray • lemon glycerin swabs may be useful if the person is able to produce saliva. However, in the presence of xerostomia, these swabs may further dry the mouth (as glycerol is desiccating), and the lemon may irritate any open sores
rhinorrhea	• nasal decongestants • antihistamines, preferably non-sedating, use standard doses
sialorrhea	• tricyclic antidepressants, i.e. Amitriptyline 25 mg po od-tid • oral scopolamine 0.02mg/kg rinse, swallow od-bid
xerostomia	• hard sour candies, chewing gum, licorice • frequent sips of ice water • suck on ice chips • baking soda mouthwash (see above) • artificial saliva • lip gloss • provide adequate humidity in the environment (be careful not to increase risk of respiratory infections)

LAST HOURS OF LIVING:	INTERVENTIONS
mouth care	• keep mucous membranes and teeth moist and clean using baking soda mouthwash q30–60 min prn • apply mouthwash and any medications with sponge swabs • do not insert fingers beyond the teeth (avoid bites) • avoid lemon-glycerine swabs • cover oral ulcers with topical anesthetics • dab candida with Nystatin suspension • a humidifier may reduce drying (be careful not to increase risk of respiratory infections)

COMPLEMENTARY THERAPIES

- relaxation therapy
- therapeutic touch

GASTRO-INTESTINAL PROBLEMS

ODYNOPHAGIA

Odynophagia = pain on swallowing.

PRESENTATION

Most often described as retrosternal pain associated with a sense of spasm or fullness. Usually made worse by swallowing fluids/food.

CAUSES

Infectious:
- candida (may occur without an oral infection)
- CMV
- herpes simplex/zoster

Malignancy:
- Kaposi's sarcoma
- lymphoma

Other:
- esophageal ulcerations
- excess alcohol
- hiatus hernia
- hyperacidity, reflux
- radiation therapy
- spicy food
- stress

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- lift head of bed, lie in upright position

PROBLEMS	INTERVENTIONS
pain	• analgesics: – provide stepwise approach (see Pain) – NSAID's may be particularly helpful • anesthesia: – oxethazaine, aluminum and magnesium hydroxide mouthwash (Mucaine®) 15–30 mls tid-qid, rinse mouth, gargle, then swallow
gastroesophageal reflux heartburn, hyperacidity	• to neutralize excess acid: – Al or mg antacids, 15-30 mls po q2h prn (many available) – alginic acid (Gaviscon®) 10–20 mls or 2-4 tabs po qid pc + hs

- to reduce acid production:
  - ranitidine 150 mg po q12h
  - famotidine 20-40 mg po od, 10-20 mg iv q12h
  - omeprazole 20-40 mg po od
- to cover open esophageal/gastric ulcers; sucralfate 1 gm po qid ac+hs

COMPLEMENTARY THERAPIES

- chiropractic – diaphragm release for hiatus hernia
- relaxation therapy
- therapeutic touch

DYSPHAGIA

Dysphagia = difficulty swallowing.

PRESENTATIONS

May eat and drink less. Foods or thickened fluids may be easier to swallow than thin fluids. May not be swallowing, even saliva.

CAUSES

Infectious:
- candidiasis
- CMV
- herpes simplex
- herpes zoster
- neuromuscular:
  - HIV encephalopathy
  - PML

Malignant:
- Kaposi's sarcoma
- lymphoma

Other:
- acid reflux
- asthenia
- irritants:
  - alcohol
  - spicy foods
- poor mastication
- ulcers

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- always ensure that the person can protect his/her airway before giving oral fluids, food or medications
- reduce or discontinue irritating medications/substances
- minimize oral medications
- change to an alternate route of drug/fluid administration if necessary
- consult nutritionist for alternate fluids/foods, thickeners, etc.
- consider swallowing assessment (consult speech pathologist)
- manage associated heartburn, hyperacidity gastroesophageal reflux (see Odynophagia)

PROBLEMS	INTERVENTIONS
slow to swallow, fluids/food "sticking", poor gastro-esophageal sphinter tone	• to increase peristalsis: – metoclopramide 5–10 mg po, im, iv tid-qid, 1/2 hr ac + hs, or – domperidone 5–20 mg po tid-qid, 1/2 hr ac + hs – cisapride 5–10 mg po tid-qid, 1/4 hr ac + hs or 20 mg po bid
poor food intake	• establish whether fluids, thickened fluids or soft foods are easier to swallow (consult speech pathologist) • if ability to swallow and/or aspiration are of concern, test ability to swallow with a small quantity of water before each feeding • cool, soft foods may be easiest to swallow • small, frequent meals • feed slowly, in upright position. If assistance is required, the feeder should practice good feeding techniques • do not force feed • catheters may be used to introduce nutrition past the epiglottis when the person is aspirating frequently • naso-gastric feeding tubes may be needed if long term support is required (not to be used if aspiration is a problem) • consult nutritionist
dysphagia in children	• acute dysphagia may require a limited course of total parenteral nutrition (TPN) to avoid or reduce weight loss during an acute episode

LAST HOURS OF LIVING	INTERVENTIONS
loss of gag, loss of ability to swallow	• loss of the gag reflex and the ability to swallow is one of cardinal signs that death is occurring • families and caregivers must be instructed when to stop oral intake. Avoid aspiration and the possible guilt that someone may have caused the death • fluids may build-up in the back of the throat and present as gurgling and crackling as air moves through the thick mixture (known as the "death rattle"). This is often perceived as choking. Provide education and support to settle those who find the sound distressing • management should include: – no further administration of fluids and food – keep mucous membranes moist, not wet (see Dehydration) – scopolamine (hyoscine) may decrease saliva production and reduce the amount of fluid collecting in the back of the throat: • start with scopolamine 0.3-0.6 mg sc q4-8h prn for first 12-16 hrs and apply 1–2 Transderm-V® patch(es) behind alternating ears q72h (takes 12 hours to work). Atropine is not indicated as it may lead to cardiac, respiratory and/or CNS stimulation • use postural drainage or repositioning to clear or move fluids (to get over the "coffee percolator-like" effect) • in extreme or re-occurring situations, i.e. PML, oropharyngeal or nasopharyngeal suctioning may be needed (may be very stimulating/irritating)

COMPLEMENTARY THERAPIES

- massage with relaxing oil in lateral lying position, i.e. neroli oil
- relaxation therapy

ABDOMINAL PAIN

PRESENTATIONS

May be constant, intermittent (colic, cramps), burning, associated with food or not, radiate into back, chest, shoulder or gonads.

CAUSES

APPENDICITIS (RARE)
- **Infectious**
- **Malignant:**
  - Kaposi's sarcoma, lymphoma
- **Other:**
  - fecolith

CHRONIC PELVIC INFLAMMATORY DISEASE
- **Infectious:**
  - salpingitis

BOWEL OBSTRUCTION
- **Infectious:**
  - MAC
- **Malignant:**
  - Kaposi's sarcoma
  - lymphoma
- **Other:**
  - stool

ENTERITIS
- **Infectious:**
  - campylobacter
  - cryptosporidiosis
  - MAC
  - salmonella
  - shigella

CHOLECYSTITIS
- **Biliary tract obstruction:**
  - Kaposi's sarcoma
  - stones
  - lymphoma
- **Infectious:**
  - campylobacter fetus
  - candida
  - CMV
  - cryptosporidiosis
  - MAC

SPLENIC
- **Infectious:**
  - MAC
- **Malignant:**
  - lymphoma

PANCREATITIS
- **Infectious:**
  - CMV
  - cryptococcosis
  - MAC
- **Drug Induced:**
  - alcohol
  - corticosteroids
  - ddI
  - pentamidine

PERITONITIS
- **Infectious:**
  - gram negative pathogens
  - histoplasmosis
  - MAC
  - pneumocystis
  - TB
- **Malignant:**
  - Kaposi's sarcoma
  - lymphoma
- **Other:**
  - bowel perforation

RETROPERITONEAL ADENOPATHY
- **Infectious:**
  - MAC
  - TB
- **Malignant:**
  - Kaposi's sarcoma
  - lymphoma

HEPATITIS
- **Infectious:**
  - hepatitis A, B, C, D
  - MAC
- **Malignant:**
  - lymphoma

ILEUS
- **Infectious:**
  - HIV
  - other
- **Drug Induced:**
  - anesthesia
  - opioid

COLITIS
(may lead to bowel perforation)
- **Infectious:**
  - clostridium difficile
  - CMV
  - histoplasmosis

OTHER
- ascites
- gastritis
- organomegaly
- ulcers:
  - duodenal
  - gastric

MESENTERIC LYMPH NODE ENLARGEMENT
- **Infectious:**
  - MAC
- **Malignant:**
  - Kaposi's sarcoma
  - lymphoma

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- in many, the exact etiology may not be determined
- lab results may be misleading, i.e. low or normal WBC count in presence of infection
- do not assume that a perforated viscous is irreversible; laparotomy may be appropriate
- persons with HIV/AIDS are not at increased risk for abdominal wound complications

PROBLEMS	INTERVENTIONS
pain	• provide stepwise analgesia (see Pain)
bloating, distention, flatulence	• may need NG or rectal tube (with or without suction) • may need to alter or restrict diet, remove lactose • antacids containing simethicone • homeopathic: lycopodium, start with 6 ch. qid ac + hs, increase to 30 ch tid ac, if needed
colic, cramps	• for obstruction that you believe to be reversible: – codeine 30–60 mg po, pr, sc q4h prn – for opioid naive: morphine 5–10 mg po, pr, sc q4h prn (or hydromorphone equivalent) – for those on opioids: increase morphine (or hydromorphone) by 25–50% or add codeine – may also add: – diphenoxylate (Lomotil®) 2.5–5.0 mg po q4–6h prn, max 20mg/24hrs – loperamide (Imodium®) 2–4 mg po q4–6h prn, max 16 mg/24hrs

	– hyoscine butylbromide (Buscopan®) 10–20 mg po, sc, im, iv 1-5 times/24 hrs – dicyclomine (Bentylol®) 10-20 mg po tid-qid or 20 mg im q4-6h prn • for obstruction that you believe to be irreversible: – use diphenoxylate and/or loperamide as above, routinely, not prn – may also add opioids as above • for irritable bowel symptoms: – trimebutine (Modulan®) 100-200 mg po tid ac – homeopathic: staphysagria, start with 6 ch. qid ac + hs, increase to 30 ch tid ac, if needed • for intense cramping: – avoid foods that may cause gas or cramps, i.e. beans, cabbage, broccoli, cauliflower, highly spiced foods or too many sweet or carbonated drinks – homeopathic: colocynth, same dosage as staphysagria above
peritoneal pain (rebound)	• provide stepwise analgesia (see Pain) • NSAID's may be very helpful
visceral pain, organomegaly	• provide stepwise analgesia (see Pain) • steroids may be very helpful: – prednisone 10-80 mg po od – dexamethasone 1-8 mg po, iv, im, sc q6h • NSAID's may also be helpful

COMPLEMENTARY THERAPIES

- relaxation therapy
- therapeutic touch
- abdominal massage to reduce tension in abdominal wall
- aromatherapy-fennel or camomile (to reduce abdominal tension)

NAUSEA, VOMITING, RETCHING

PRESENTATION

Nausea may be much more distressing than vomiting.
Vomiting without associated nausea is likely to be due to a motility problem or mechanical obstruction.
Retching may occur without nausea or vomiting.

CAUSES

Often multi-factorial and subjective (**10 M's of emesis**):

PROBLEMS	CAUSES
cerebral Masses, increased intracranial pressure, nerve dysfunction	• lymphoma of brain • toxoplasmosis
Meningeal irritation, stimulation, increased intracranial pressure	• infectious • space occupying lesions
Mental anxiety	• heightened by: – dislikes, i.e. foods, activities – fear and fantasy – smells

vestibular stimulation, Movement	• medications, especially opioids, i.e. morphine • motion sickness
Medications acting on chemoreceptor trigger zone	• chemotherapy • opioids
Mechanical obstruction, intra and/or extra luminal	• upper GI tract: – malignancies, i.e. Kaposi's sarcoma, lymphoma producing gastric outlet obstruction, i.e. squashed stomach syndrome • lower GI tract: – faeces, bowel obstruction – hemorrhoids – malignancies, i.e. Kaposi's sarcoma, lymphoma, squamous cell carcinoma
altered GI Motility, slow swallowing, gastric emptying, ileus	• decreased peristalsis: – medications, especially: • anti-cholinergics • opioids – PML – post anaesthetic • increased peristalsis: – infection/inflammation, especially with fever – obstruction • hyper active gag reflex: – cough – hiccups
Mucosal irritation, esophageal or gastric	• infections: – candidiasis – CMV • medications: – ASA, NSAID's – steroids • hyperacidity, reflux, hiatus hernia • blood in stomach
Metabolic	• dehydration • electrolyte imbalance • liver failure, obstruction • uremia
Myocardial	• CHF • ischemia • myopathy • pericarditis

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- restrict and/or hold fluid and food intake, if appropriate
- fluid replacement should be the primary focus of attention as dehydration (salt and water loss) is a frequent complication:
  – encourage electrolyte balanced fluids, i.e. Gatorade®, soups
- avoid fried, greasy foods, alcohol or medications that may cause nausea or vomiting
- position person upright (sit or elevate head to a semi-sitting position)
- provide anti-emetics 1/2 hr before meals

PROBLEMS	INTERVENTIONS
cerebral Masses	• decrease intra-cranial pressure: – dexamethasone 1–8 mg po, iv, im, sc q6h – to reduce pressure acutely, mannitol 100 mls of 10 or 20% solution may be given as a rapid iv infusion once or twice • decrease stimuli
Meningeal irritation	• manage increased intra-cranial pressure as above in metastases • manage headache • to influence central chemoreceptor zone – prochlorperazine 5–20 mg po, pr, im, iv q4h prn – haloperidol 0.5–5.0 mg po, sc, im q4–6h prn – chlorpromazine 10–25 mg po, pr, im q6–12h prn – nabilone 1–2 mg po q6-12h prn
Mental anxiety and fear	• benzodiazepines may be very useful: – lorazepam 0.5–2 mg po, sl q6–8h prn – diazepam 2–10 mg po q6-8h – clonazepam 0.25–2 mg po q12h • manage hyperactive gag reflex (see Cough) • relaxation therapy
vestibular stimulation (Movement)	• use prophylaxis before activity • dimenhydrinate 50–100 mg po, pr, im, iv q4–6h • scopolamine 1.5 mg transdermal patch behind alternating ears q72h (takes 12 hours for initial effect) • scopolamine 0.3–0.6 mg sc q4–8h prn • meclizine (Bonamine®) 25-100mg po od-qid • cyclizine (Marzine®) 50mg im q8h
Medications	• to influence central chemoreceptor zone (see Meningeal irritation above)
Mechanical obstruction, upper GI tract	• restrict or hold oral fluid intake, hold solid food intake • NG tube and/or suction may be appropriate • for partial obstruction with altered mobility consider peristaltic stimulants (see altered GI Motility below) • to control heartburn, hyperactivity (see Odynophagia) • may also add a centrally acting anti-emetic (see Meningeal irritation above)
Mechanical obstruction, lower GI tract	• restrict or hold oral fluid intake, hold solid food intake • NG tube and/or suction may be very appropriate • for high intestinal obstructions, reduce hepatic/pancreatic secretions using scopolamine 0.3–0.6 mg sc q4–8h prn or a continuous infusion 0.1–0.2 mg sc q1h • treat reflux and/or hyperaciditiy as above for upper GI tract obstruction • treat colic (see Abdominal Pain) • treat reversible causes of obstruction (see Constipation/Bowel obstruction) • may also add one of: – a centrally acting anti-emetic (see Meningeal irritation above)

altered GI Motility (Gastric stasis, ileus)	• to stimulate peristalsis, tighten the lower esophageal sphincter, relax the pyloric sphincter: – metoclopramide 5–10 mg po, im, iv tid-qid, 1/2 hr ac + hs – domperidone 5–20 mg po tid-qid, 1/2 hr ac + hs – cisapride 5–10 mg po tid-qid, 1/2 hr ac + hs or 20mg po bid (may be dangerous in complete obstruction) • if caused by opioids, consider alternate opioid, i.e. hydromorphone
Mucosal irritation	• treat underlying infections • low spice, low acid food • encourage to remain sitting 30 minutes after eating • to control reflux: and reduce excess acid production (see Odynophagia) • for NSAID induced mucosal irritation: – ensure adequate hydration – misoprostol 100–200 µg q6h – consider holding or discontinuing NSAID – H_2 receptor antagonists are not indicated unless excess acid is also a problem • if not controlled, may also add one of: – prochlorperazine 5–10 mg po, pr, im, iv q4h prn, or – haloperidol 0.5–4.0 mg po, sc, im q4–6h prn, or – chlorpromazine 10–20 mg po, pr, im q4–6h prn
Metabolic	• correct electrolyte imbalance and dehydration (see Dehydration) • correct hypercalcemia: – rehydrate with N/S, using furosemide as needed to ensure adequate output – steroids may be added: dexamethasone 1–8 mg po, iv, im sc q6h • if not controlled, add one of prochlorperazine, haloperidol, chlorpromazine (see Mucosal irritation above)
Myocardial	• treat underlying cardiac causes • treat cardiac pain (see Chest/cardiac pain) • if not controlled, add one of prochlorperazine, haloperidol, chlorpromazine (see Mucosal irritation above)

COMPLEMENTARY THERAPIES

- acupuncture
- aromatherapy: extract of wild strawberry
- homeopathy: ipecac 6 ch qid ac + hs, increase to 12 ch qid to 30 ch tid if needed
- relaxation therapy
- therapeutic touch

CONSTIPATION, BOWEL OBSTRUCTION

Tenesmus = ineffectual and painful straining at stool or in urinating.

PRESENTATION

Reduced numbers of bowel movements with increased stool consistency. Overflow diarrhea mixed with hard stool.

May lead to difficulty defecating. In extreme, may lead to little or no stool movement, fecal impaction, bowel obstruction, overflow incontinence and/or tenesmus

CAUSES

Infectious:
- HIV autonomic neuropathy

Malignancy:
- Kaposi's sarcoma
- lymphoma

Other:
- ileus:
  - post operative
  - narcotic bowel syndrome
- lack of mobility (inability to get to bathroom or other equipment)
- lack of privacy
- medications:
  - opioids
  - anti-cholinergics
- metabolic:
  - hypercalcemia
  - hypokalemia
- spinal cord compression
- dehydration
- peri-anal problems

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- establish the person's normal bowel habit, current number of bowel movements/week, consistency, colour and volume of stool
- mobilize as tolerated
- maintain adequate hydration (see Dehydration)
- maintain regular bowel routine, especially if the underlying causes are neurological
- toilet regularly, strongest peristalsis is in early morning (7-9am)
- sit upright if possible
- maintain good peri-anal care (see Peri-anal problems)
- for laxatives, use po routes first. If not adequate after 2-3 days, use rectal suppositories. If still no results, use enemas

APPROACHES	INTERVENTIONS
increase bulk (except if opioid related)	• psyllium • fiber, bran, pectin • increase fluid intake (see Dehydration)
soften stool	• sodium or calcium docusate 100–200 mg po od-tid • osmotic cathartics: – magnesium salts, i.e. Phillips' Milk of Magnesia® 15-30 mls po od-qid – lactulose 15–30 mls po od q8h
reduce bloating, distention, gas	• reduce air swallowing by educating, behaviour modification • may need to alter or restrict diet, remove lactose • may need NG or rectal tube (with or without suction) • homeopathic: lycopodium, start with 6 ch qid ac + hs, increase to 30 ch tid ac, if needed • antacids with simethicone
stimulate peristalsis (ileus, narcotic bowel syndrome)	• bowel irritants: – prune juice 120-240 mls od-bid – senna tablets or tea 1–2 po od-bid – bisacodyl 10 mg pr od-tid – cascara 5-10 ml + magnesium hydroxide + mineral oil (Magnolax®) 25 mls prn

	• propulsive medications: – metoclopramide 5–10 mg po, im, iv tid-qid, 1/2 hr ac + hs – domperidone 5–20 mg po tid-qid, 1/2 hr ac + hs – cisapride 5–10 mg po tid-qid, 1/4 hr ac + hs or 20 mg po bid **Caution: may be dangerous if mechanical obstruction present**
relax and/or anaesthetize anal sphincter	• sitz bath • digital sphincter stimulation • glycerin suppositories 1 pr od-tid • lidocaine spray or jelly (2% unidose syringes) • dibucaine 1% (Nupercainal®), apply as directed • post bowel movement, apply silicone ointment to rectal area
disimpaction	• digital extraction after topical anaesthesia • enemas: – sodium phosphate (Fleet®) – tap water or saline – mineral or peanut oil (ask about peanut allergy first) – 2 bottles of sodium phosphate + 50 mls hyrdogen peroxide (added at the last minute)

COMPLEMENTARY THERAPIES

- therapeutic touch
- homeopathy:
  - moderate, with cramping: staphysagria 6 ch tid ac
  - extreme, no movement: alumina 30 ch bid
  - other pattern: consult practitioner

DIARRHEA

Diarrhea = Stools that are looser than normal in consistency.

PRESENTATIONS

May occur with increased frequency:
- flatulance
- multiple bowel movements/day
- hemorrhoids
- fissures
- rectal bleeding
- watery bowel movements
- cramps/colic

CAUSES

Infectious:
- lospora
- cryptosporidium
- microsporidium
  - MAC
  - salmonella
  - other enteric pathogens

Other:
- GI bleeding
- malabsorption:
  - high osmotic feeds
  - HIV enteropathy
  - lactose intolerance
- medications
- obstruction with overflow incontinence
- rectal incontinence
- stress

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- establish the person's normal bowel habit, current number of bowel movements/day, consistency, colour and volume of stool and fluid
- maintain adequate hydration (see Dehydration)
- ready access to a bathroom or commode
- use incontinent devices to prevent soiling
- deodorize
- maintain dignity, privacy, especially while toileting
- maintain good peri-anal care (see Peri-anal problems)

APPROACHES	INTERVENTIONS
diet, lactose intolerance	• small, frequent, low fat, low lactose meals: – for lactose intolerance, use lactase enzyme 1–4 tablets 15–30 minutes before meals • if cramping is a problem, avoid foods that may cause gas or cramps, i.e. beans, cabbage, broccoli, cauliflower, highly spiced foods or too many sweet or carbonated drinks
increase bulk	• psyllium • fiber, bran, pectin
manage transient diarrhea	• attapulgite (Kaopectate®) 30 mls or 2 tabs prn • aluminum antacids (Amphogel®) 15-30 mls po q4h prn • bismuth salts (Pepto Bismol®) 15-30 mls po bid-qid
reduce intestinal secretions	• octreotide (Sandostatin®) 100-500 μg sc q8h
reduce peristalsis	• opioids: – diphenoxylate 2.5-5.0 mg po q4–6h prn, max 20 mg/24 hrs – loperamide 4 mg po first dose then 2-4 mg after each unformed stool, max 16 mg/24 hrs Note: under careful supervision, might increase maximum doses of diphenoxylate and loperamide) – codeine 30-60 mg po, im q4h prn – strong opioids: – for opioid naive: morphine 5-10 mg po, pr, sc q4h prn (or hydromorphone equivalent) – for those on opioids: increase morphine (or hydromorphone) by 25–50% or add codeine

COMPLEMENTARY THERAPIES

- relaxation therapy
- therapeutic touch
- homeopathy:
  - periodic diarrhea, with colic: DIA complex prn
  - gripping pain: cuprum arsenicum 6 ch tid
  - other patterns: many effective, symptom specific remedies, consult practitioner

BOWEL INCONTINENCE

PRESENTATION

Loss of sphincter competence that leads to consistent loss of stools.

CAUSES

Infectious:
- autonomic neuropathy:
  - CMV
  - HIV

Malignancy:
- cord compression:
  - Kaposi's sarcoma
  - lymphoma
  - squamous cell carcinoma

Other:
- fecal impaction (overflow incontinence)
- peri-anal problems
- post traumatic loss of sphincter competence
- delirium
- dementia

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- increase bulk in the diet
- toilet regularly with appropriate privacy
- use diapers and protective bed coverings as preferred by the individual
- anticipate pain (see Peri-anal pain)
- if incontinence appears early in HIV disease and will be an ongoing, unmanageable problem, consider a bypass colostomy

PERI-ANAL PAIN

PRESENTATION

May be increased with bowel movements, rectal manipulation/ penetration, sitting or urination.

Bowel movements or urination may lead to tenesmus.

CAUSES

Infectious:
- abscess
- candida
- CMV
- herpes simplex or zoster
- warts
- other sexually transmitted diseases

Malignant:
- Kaposi's sarcoma
- lymphoma
- squamous cell carcinoma

Other:
- fissures
- fistulae
- hemorrhoids
- inflammatory strictures

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- sitz baths may improve hygiene and peri-anal pain
- cover open fissures, ulcers with mineral oil or zinc oxide ointment (to reduce contact with oxygen, which produces the pain)
- sit on soft cushions, or foam cushions with cut-outs (or donuts) to reduce discomfort
- maintain hydration (see Dehydration)

APPROACHES	INTERVENTIONS
manage pain	• to anaesthetize locally: – lidocaine 10% endotracheal spray, tid-qid, before or after bowel movements – lidocaine 2% jelly or 5% ointment, tid-qid, before or after bowel movement – dibucaine (Nupercainal®) cream, ointment or suppositories, tid-qid, before or after bowel movements • selective nerve blocks (see Nerve blocks) • provide stepwise analgesia (see Pain and Neuropathic Pain) • may need to bypass painful area – rectal tube – colostomy if prognosis warrants the procedure
reduce inflammation	• Burrow's compresses • consider steroids: – prednisone 10-60 mg po od – dexamethasone 1-4 mg po, iv, im, sc q6h
soften stool	• diet, increased fiber, bran, pectin • sodium or calcium docusate 100-200 mg po bid-tid

COMPLEMENTARY THERAPIES

- homeopathy:
  - internal hemorrhoids: collubrina 6 ch qid ac + hs (stimulates portal circulation)
  - external hemorrhoids: aescylus hippocastrum 6 ch qid ac + hs
- hydrotherapy
  - alternate hot and cold water over region using personal shower attachment
  - otherwise, alternate warm compresses and ice packs

PERI-ANAL PROBLEMS

PRESENTATION

May include:

- bleeding
- fissures
- hemorrhoids
- superficial ulcerations, lesions
- discharges
- fistulae
- pruritis

CAUSES

Infectious:

- herpes simplex or zoster
- CMV
- warts
- candidiasis
- other sexually transmitted diseases
- abscess

Other:

- stress
- loss of anal sphincter competence
- inflammatory strictures

Malignant:

- Kaposi's sarcoma
- lymphoma
- squamous cell carcinoma

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- use sitz baths to improve peri-anal hygiene and decrease discomfort
- sit on soft or foam cushions with cut-outs (or donuts) to remove pressure from the peri-anal area
- prevent constipation (see Constipation)
- incontinence device if required
- provide absorbant pad if discharge present
- moistened rectal wipes for hygiene and comfort (avoid wipes with alcohol)

PROBLEMS	INTERVENTIONS
bleeding	• compression • silver nitrate sticks for small, accessible bleeding spots • (see Bleeding)
fissures, hemorrhoids	• relieve pressure • stool softeners (see Constipation/Bowel obstruction) • astringents, i.e. zinc sulphate with/without pramoxine • topical hydrocortisone
pruritis	• topical corticosteroids (do not apply to herpetic lesions) • topical anesthetics (see Peri-anal pain)
ulceration	• acycolvir 200-800 mg po 5 times/day. • Burrow's compresses • protect with silicone cream, zinc oxide ointment, etc.

COMPLEMENTARY THERAPIES

- laser therapy (infra-red/helium) to ulcerations
- relaxation therapy, therapeutic touch

GENITO-URINARY PROBLEMS

GENITO-URINARY PAIN

Dysuria = Pain on urination

PRESENTATIONS

Pain may be constant ache or burning.
May be intermittent and/or increased with bowel movements, erection, ejaculation, vaginal intercourse or urination.

CAUSES

Infectious:
- candida
- pelvic inflammatory disease
- UTI
- other sexually transmitted diseases

Malignant:
- Kaposi's sarcoma
- lymphoma

Other:
- catheter
- HIV neuropathy
- sexual intercourse
- trauma
- medications: foscarnet

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- maintain good genito-urinary hygiene
- maintain adequate hydration (see Dehydration)

PROBLEMS	INTERVENTIONS
bladder spasm	• relieve obstruction with intermittent or indwelling catheter • analgesia: – provide stepwise analgesia (see Pain) – phenazopyridine (Pyridium®) 200 mg po tid • reduce spasm: – NSAID's may be very helpful • smooth muscle relaxants: – hyoscine butylbromide (Buscopan®) 10-20 mg po od-5 times/day – flavoxate (Urispas®) 100-200 mg po tid-qid – oxybutynin (Ditropan®) 5 mg po bid-tid – amitriptyline 25-50 mg po qhs
dysuria	• phenazopyridine (Pyridium®) 200 mg po tid
pain	• provide stepwise analgesia (see Pain and Neuropathic Pain)
renal colic	• provide stepwise analgesia (see Pain) • NSAID's may be very helpful

COMPLEMENTARY THERAPIES

- acupunture
- homeopathy: numerous, symptom specific interventions, consult with a practitioner

URINARY CONTROL PROBLEMS

PRESENTATION

May include:

- frequency
- incontinence
- urgency
- hesitancy
- retention

CAUSES

Infectious:

- autonomic neuropathy:
  - HIV
- cystitis(all causes)
- myelitis:
  - CMV
  - HIV
- prostatitis (all causes)
- urethritis (all causes)

Other:

- medications:
  - opioids
  - anti-cholinergics
- delirium
- dementia

Malignant:
(cord compression or local destruction/obstruction)

- Kaposi's sarcoma
- lymphoma

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- re-evaluate medications

PROBLEMS	INTERVENTIONS
incontinence, urgency, frequency	• maintain close proximity to toilet facilities • toilet regularly • use condom catheter, if tolerated • use diapers and protective bed coverings as preferred by the individual • oxybutynin (Ditropan®) 5 mg po bid-tid
retention, hesitancy	• apply pressure in the suprapubic area of the abdomen to try to initiate urination • non-obstructive: – bethanechol chloride 10-50 mg po tid-qid or 2.5-10 mg sc tid-qid may improve function, otherwise treat as obstructive • obstructive: – indwelling urinary catheter, silastic if long term – intermittent urinary catheterization

COMPLEMENTARY THERAPIES

- homeopathy: many remedies available, initially try equisetum tincture qid, consult practitioner for more symptom specific remedy if needed

GYNECOLOGICAL PROBLEMS

Dyspareunia = pain on vaginal penetration

PRESENTATION

May include:

- bleeding
- dyspareunia
- ulcers
- discharge
- pruritis

CAUSES

Refer to: *Practice Guidelines for Obstetrical and Gynecological Care of Women Living with HIV*.

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- maintain good genito-urinary hygiene
- provide stepwise analgesia (see Pain)

COMPLEMENTARY THERAPIES

- homeopathy: many highly effective remedies, consult practitioner

SKIN PROBLEMS

SKIN PAIN

PRESENTATION

May become worse with movement or on contact with clothing, sheets.

Infectious:

- abscesses
- cellulitis
- herpes simplex or zoster

Malignant:

- Kaposi's sarcoma (malignant ulcers)

Other:

- decubitus ulcers
- medication:
  - chemotherapy
- neuropathy:
  - HIV related
  - post-herpetic

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

See below

PROBLEMS	INTERVENTIONS
pain	• provide stepwise analgesia (see Pain and Neuropathic Pain) • to reduce contact, irritation: – light, non-irritating clothing or bed coverings – over-bed cradle to keep sheets off hyper-sensitive skin – ensure even weight distribution on bed (see Skin Care/problems particularly support)

COMPLEMENTARY THERAPIES

- massage therapy

SKIN CARE[19,20]

GENERAL PRINCIPLES OF SKIN CARE

Skin care requires considerable attention, particularly as a person spends more time in one position on the bed, including:

APPROACHES	INTERVENTIONS
bathing	• bathe with non-abrasive soap and tepid water • air or towel dry • bathing stimulates circulation, reduces odours and the risk of infection • maintain body fluid precautions while bathing
bleeding	• manage small bleeding sites with silver nitrate sticks • more extensive bleeding may require the application of: – topical thrombin 1,000-5,000 units sprayed on the area of bleeding (Thrombostat®) – Kaltostat™ dressing (layer of Jelonet™ on top of Kaltostat™ will reduce sticking, and risk of bleeding) – absorbent pressure dressings • if there are risks of large bleeds, warn family and caregivers of potential risks and develop a clear management plan which may include: – the removal of family from the room – the use of red or dark coloured towels – analgesic and/or sedative medication – (see Bleeding)
dry skin	• maintain adequate hydration (see Dehydration) • use hydrating creams, ointments, oils, i.e. Uremol™ HC • humidify room

infections	• fungal infections: – topical or systemic anti-fungals as indicated • staphylococcal or streptococcal infections, i.e. cellulitis: – staphylococcal-cloxacillin 250-500 mg po, iv q6h for 10 days – streptococcal-clindamycin 450 mg po q6h or – amoxicillin 250-500 mg po q8h – topical antibiotics with or without occlusion • anaerobic infections, i.e. malignant ulcers: – metronidazole 10% cream bid-tid or – silver sulfadiazine (Flamazine®) cream bid-tid – if extensive: • systemic metronidazole 250-500 mg po, iv tid or • metronidazole vaginal ovules diluted with 50 mls N/S or iv solution mixed with N/S and sprayed onto lesions will prevent buildup associated with creams
massage	• can enhance capillary blood flow, reduce the risk of local ischemia of skin, and relax muscles and stiff joints • may shift peripheral edema • should be avoided on erythematous or open leaking areas
movement, turning	• intermittent moving and turning reduces the risk of skin breakdown and reduces position fatigue/discomfort • combine with massage prior to turning • a draw sheet may assist turning and will reduce shearing forces • pillows behind the back and between legs/ankles will provide support and prevent skin-to-skin contact pressure ulcers • if turning is painful, it may need to be stopped. An air mattress or air bed may be the only way to prevent skin breakdown
odour control	• air fresheners, filters • place charcoal dressing on top of non-stick dressings • apply yogurt and honey directly to the lesion • place Cepacol® soaked gauze on top of other dressings (do not get Cepacol® onto wound site) • place kitty litter or activated charcoal in the room (under the bed) • vinegar or vanilla also reduce odour in room
protection	• cover reddened pressure points clear plastic dressings to reduce shearing, tearing and pain • cover pressure ulcers with hydrocolloid dressing to provide cushioning as well as reduce shearing, tearing and pain (see Skin Breakdown/ Pressure ulcers)
pruritis	• consider medication, environmental or food allergies • bathe with/without oatmeal or oils • maintain adequate hydration (see Dehydration) • apply astringents such as calamine (if indicated) • apply protective creams, oils • consider topical steroids (except when herpetic lesions are present) • consider oral antihistamines, especially hydroxyzine, cyproheptadine • apply camphor, menthol, praxnoxine (Sarna-P®) prn • for severe, refractory pruritis, consider oral steroids: – prednisone 10-60 mg po od • if jaundice present, consider ammonium ion exchange resins, i.e. cholestyramine

support	• for intact skin, use a thick (>4 inch) egg-crate, air or bubble mattress • for extensive edema, skin breakdown or pain on turning, an air mattress or air bed may be more effective • under all circumstances, try to avoid contact with plastic or abrasive materials
sweating, night sweats	• reduce body and skin temperature (see fever) • bathe as above, dry thoroughly • remove plastic and use absorbant bed coverings, i.e. terry cloth, flannelette • re-evaluate medications: – alcohol, morphine, tricyclic anti-depressants • maintain hydration (see Dehydration) • indomethacin 25-75mg po, pr q8-12h for night sweats • if extreme, try hyoscyamine (Levsin®) 0.125-0.25 mg po, sl q4h routinely or prn • NSAID's may be useful if due to morphine • if limited to palms, soles and/or axillae, use 20% aluminum chloride hexahydrate (deodorant) • manage associated anxiety (see Anxiety)
temperature	• keep warm, but not too hot: – coverings (warm, but light weight) – appropriate room temperature • manage fever (see Fever)
wet, leaking skin, exudates	• clean regularly to remove exudates and debris • Burrow's compresses 1/20 bid-tid • cover with non-stick dressings, including non-stick meshes, i.e. Jelonet™ with dry gauze wrapping

LAST HOURS OF LIVING	INTERVENTIONS
skin care	As the dying person loses his/her ability to move, skin care may become increasingly problematic if the process becomes prolonged. In addition to general skin care: • turning may need to be reduced or discontinued, particularly if it is painful • bathing should be continued right up until death

COMPLEMENTARY THERAPIES

- homeopathy: for periodic sweats: sulphur 30 ch bid-tid, if ongoing, may need to drop to 6 ch, prn
- aromatherapy: geranium and lavender oils are soothing
- infrared-helium neon laser therapy may improve decubitus ulcers
- massage: sweet almond oil nourishes dry skin

SKIN BREAKDOWN/PRESSURE ULCERS[19,20]

Ulcer **=** a loss of substance on a cutaneous or mucous surface, causing gradual disintegration and necrosis of the tissues.

Pressure/decubitus ulcer **=** an ulceration caused by prolonged pressure on an area of skin in a person confined to bed for a prolonged period of time.

Skin breakdown/ulceration is the result of ischemia in the affected area and occurs in persons who are:

- poorly nourished/cachectic
- immobile and lie in the same position constantly
- dehydrated/have dry skin
- edematous/have wet skin
- dependant on others for personal hygiene

PRESENTATIONS

Stage 1	nonblanchable erythema of intact skin (the heralding lesion of skin ulceration, not to be confused with reactive hyperemia)
Stage 2	partial thickness skin loss involving epidermis and/or dermis
Stage 3	full thickness skin loss involving damage or necrosis of subcutaneous tissue that may extend down to, but not through, underlying fascia
Stage 4	full thickness skin loss with extensive destruction, tissue necrosis or damage to muscle, bone, or supporting structures.

Note:

- identification of stage 1 pressure ulcers may be difficult in those whose skin is darkly pigmented
- when eschar is present, accurate staging is not possible until the eschar has sloughed or the wound has been debrided

CAUSES

Malignant:

- malignant ulcers

Other:

- reactive hyperemia

APPROACHES AND INTERVENTIONS

Examination, investigation and treatment of underlying causes should be appropriate to the presentation, stage and context of the person and illness.

- assess risk of skin breakdown using Norton[21] or Braden[22] assessment scales
- consider consulting a wound care specialist, i.e., enterostomal therapist, dermatologist or plastic surgeon
- remove necrotic tissue by cross-hatching with a scalpel, then apply a debriding agent, i.e. elase, elase with chloromycetin, hypertonic gel, (i.e. Hypergel®, Intrasite Gel®)
- treat clinical infection
- obliterate dead spaces with packing or gel
- remove exudates
- keep wound clean, moist (enhances growth of new tissue):
  - clean with normal saline or diluted hygeol in head and neck area
  - avoid iodine containing solutions when there is any skin breakdown/ulceration as this inhibits re-epithelialization
- insulate, protect wound surface
- maintain adequate circulation
- laser therapy may be useful

PROBLEMS	INTERVENTIONS
stage 1 pressure ulcer	• clean with normal saline • apply a transparent adhesive dressing, i.e. Tegaderm®, OpSite®, to protect against shearing forces • **do not massage**
stage 2 pressure ulcer	• apply a protective hydrocolloid dressing, i.e. Comfeel Ulcus®, Duoderm®
stage 3 and 4 pressure ulcer	• use saline gel, i.e. Normagel® and absorptive dressing, i.e. gauze, or Mesalt® to absorb thick exudates • non-stick dressings may be applied first, e.g. Telfa®, Jelonet® with petroleum jelly, Mepital® to reduce tearing with dressing changes

COMPLEMENTARY THERAPIES

- laser therapy: infrared-helium neon laser therapy may improve pressure ulcers

AIDS SPECIFIC SKIN PROBLEMS

Standard therapies for these problems follow. For hard to manage situations, consider consulting a dermatologist.

PROBLEMS	INTERVENTIONS
bacillary angiomatosis	• Refer to *Module 1* • also itraconazole 100-200 mg po od
folliculitis	• topical skin cleansers, i.e. povidone-iodine, erythromycin in alcohol, triclosan (Tersaseptic®), hexachlorophene (Phisohex®) • topical anti-fungals i.e., itraconazole 100-200 mg po od • systemic antibiotics and anti-fungals
herpes simplex, herpes zoster	• for primary management refer to *Module 1* • continue prophylactic treatment as long as possible in order to avoid symptomatic recurrences • for associated pain, see Neuropathic Pain
impetigo	• warm soaks • topical and systemic antibiotics
malignant ulcers (KS, skin carcinomas and melanomas)	• for the primary management of Kaposi's sarcoma, refer to *Module 1* • malignant ulcers may require more extensive cleansing with: – Burrow's compresses – 10% Proviodine® – N/S – 3% boric acid solution • manage exudates, superimposed infections and odours as in general principles of skin care (see Skin breakdown/Pressure uclers)
psoriasis	• apply topical corticosteroids in combination with anti-fungal, i.e. ketoconazole, terbinafine • if very scaly, add salicylic acid • calcipotriol (Dovonex®) ointment, apply bid • consider oral vitamin A therapy
scabies	• clean laundry • topical lindane 1% lotions
seborrheic dermatitis	• terbinarfine 125 mg po bid or 250 mq po od • apply hydrocortisone 1% and anti-fungal cream combinations, i.e. ketoconazole, terbinafine, clotrimazole • use ointment forms if very dry
warts, molluscum contagiosum	• cryofreeze with liquid nitrogen • apply topical cantharidin (Cantharone®) once q1-2 weeks • for diffuse areas, apply 5% fluouracil cream q3-7 days (use with caution, very irritating)

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