

PCL 313: INTRODUCTION TO DISEASE STATES

MUSCULOSKELETAL DISORDERS

Musculoskeletal disorders (MSDs) can affect bones, muscles or soft tissues (tendons, bursae). Pain is a characteristic symptom of musculoskeletal disorders. Evaluating onset and location of the pain helps to make a clinical decision as to the most appropriate line of action.

Risk factors for musculoskeletal disorders (MSDs)

Exposure to risk factors causes MSDs.

The risk factors are divided into two categories – *Work-related (ergonomic) risk factors* and *Individual-related risk factors*.

Explanation

<i>Category of risk factors causing MSDs</i>	<i>Risk factors</i>
Work-related risk factors	Force, repetition, posture
Individual-related risk factors	Poor work practice, poor fitness, poor health habits

Points to note:

Over time, exposure to risk factors leads to MSDs (i.e., the root cause of MSDs is exposure to MSD risk factors over prolonged time).



MSD may result when the load causing fatigue is greater than recovery power.



MSD may not result when recovery power is greater than the load causing fatigue.

EXAMPLES OF MSDS

Description of injuries

Sprains and strains

- **Sprain:** overstretching of ligaments and/or joint capsule with tearing.
- **Strain:** muscle fibres are damaged by overstretching and tearing.

In sprains and strains, mobilisation, strengthening and coordination exercises are recommended to decrease risk of scar tissue formation that may limit movement.

Whiplash

- Damage to the ligaments, vertebrae, spinal cord or nerve roots in the neck region, caused by sudden jerking back of the head and neck.
- Typically associated with car accidents.

Description of overuse injuries

Muscle pain

- Stiff and painful muscles
- Common condition that occurs after patient carries out activities that are not normally undertaken (e.g. exercise by an individual used to a sedentary lifestyle).

Back pain

- May occur after strenuous work (lumbago) or when patient undertakes activities that he or she is not used to doing (e.g. gardening).
- If severe and debilitating, causing difficulty with mobility or radiating from the back down to the legs, referral is required since symptoms indicate sciatica which requires further evaluation.
- If pain is just below ribcage in the middle part to side of back, or is associated with abnormality in passing urine, refer for assessment of occurrence of kidney problems.
- Chronic back pain (occurring for more than 3 months) indicates underlying pathologies rather than injury. Examples include osteoarthritis, inflammatory conditions (e.g., arthritis, ankylosing spondylitis).

Questions to ask patient presenting with a musculoskeletal problem

- What is your age?
- Presenting symptom: – Is there pain, swelling? – Where is it? – How long have you had it?
- Patient history: – Do you have past or present injury? – Any medical conditions?

WHEN TO REFER MUSCULOSKELETAL DISORDERS

• Head injury • Suspected fracture • Deformity or severe swelling • Possible adverse drug reaction • Medication failure • Arthritis • Severe pain • Back pain associated with urinary problems or numbness

MANAGEMENT OF PAINFUL CONDITIONS

• Non-pharmacological management • Lifestyle modifications • RICE regimen adopted in injuries (rest, ice, compression, elevation) • Application of heat in chronic pain • Pharmacological approach.

Non-pharmacological management of injuries

• Consider physiotherapy where relevant • Advise patient on good posture and on exercise where indicated • Consider use of support products (e.g., soft collars in whiplash, back supports in back pain, compression supports in sprains, foam supports in bursitis).

RICE regimen

Rest

• Immobilisation is recommended for the first 24 hours. • Prolonged rest for muscle injuries is usually discouraged because the collagen scar tissue formed is unable to contract and repair is associated with some loss of flexibility.

Ice

• Reduces the local blood flow • Decreases the metabolic rate in peripheral cells • Limits the extent of inflammation and degree of pain • Administer cold pack for 30 minutes, repeating every 2 hours • Care should be employed not to damage skin by application of cold compress. If ice is used, this should not be applied directly to the skin but first wrapped in cloth to avoid burning the skin.

Compression

• Application of pressure over the injured area • Decreases bleeding and the flow of inflammatory exudates • Use a compression bandage for at least 24 hours.

Elevation

• Raise injured area to aid drainage of fluid and reduce swelling.

Application of hot packs

Some patients find relief from pain, particularly due to chronic conditions, when heat is applied to the area.

Pharmacological approach Analgesics

• Use of NSAIDs is usually warranted due to the requirement of an analgesic and an anti-inflammatory component. They may be used provided that patient is not asthmatic, is not suffering from or has a past history of peptic ulcer, and is not taking warfarin. • NSAIDs may be administered topically, thus reducing risks with use of NSAIDs. Oral administration is considered when local administration is not providing

the required pain relief. • Paracetamol and compound preparations containing opioid analgesics may be considered in patients where NSAIDs cannot be recommended.