Phytotherapy for Musculoskeletal System

Dr. Yousef Abusamra
The Musculoskeletal System

• Short-lived (lasting for short time) inflammatory disorders are not normally treated with phytomedicines.
• On the other hand, the use of botanical preparations for chronic inflammatory conditions is widely spread.
• The classical NSAID, aspirin, was originally developed as a result of study on salicin, a glycoside obtained from willow bark.
• The botanical anti-inflammatory remedies have fewer side effects.

Herbals for arthritis, rheumatism and muscle pain

Ananas (Pineapple):

• Bromelain (Ananas): is a mixture of proteolytic enzymes extracted from the fruit and stem of the pineapple.
• It is used to treat joint stiffness, arthritis, bruising and joint pain.
• Bromelain, given once daily in acute tendon injury at a dose of 7 mg/kg for 14 days, promoted healing by stimulating tenocyte proliferation.
• Tenocyte = tendon cell.
Herbals for arthritis, rheumatism and muscle pain

Turmeric (Curcuma domestica): الكركم

- The rhizomes of this plant used as an anti-inflammatory, anti-hepatotoxic, digestive.
- Most of the action is attributed to curcuminoinds.
- It has been shown to possess the followings:
  1. Inhibition of the activation of transcription factors.
  2. Cyclooxygenase inhibition.
  3. Free radical scavenger activity.
Prevention and treatment of neurodegenerative diseases by curcumin

- Cerebral ischemia
- Multiple sclerosis
- Alzheimer’s disease
- Brain tumors
- Parkinson disease
- Neuropathic pain
- Epilepsy
- Depression
- Schizophrenia

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**Herbals for arthritis, rheumatism and muscle pain**

**Willow bark**

- *Salix* species are a European phytomedicine with a long traditional use for:

1. Chronic forms of pain.
2. Rheumatoid fever.
3. Headache.

- The effect is due to the **phenolic glycoside salicin**.
Drugs used for gout

- Gout is a very painful, localized inflammation of the joints caused by hyperuricemia and the formation of needle crystals of uric acid.
- The xanthine oxidase inhibitor allopurinol is the drug of choice.
- The alternative is sulfinpyrazone, which increases excretion of uric acid.
- Prophylactic treatment should never be initiated during an acute attack as it may prolong it.
Gout treatment

- Acute gout is normally treated by indomethacin or other NSAID, but not aspirin.
- If inappropriate, colchicine can be used.
- It is obtained from the corm Colchicum autumnale.
- Corm: bulbo-tuber, or bulbotuber is a short, vertical, swollen underground plant stem.
- The plant extract should not be used because the alkaloid is toxic.
- The dose is 1 mg initially, followed by increments of 500 μg every 2-3 hrs until relief is obtained to max. of 6 mg .
- The course should not be repeated within 3 days.
Topical anti-inflammatory agents

- **Capsaicin**: it is the pungent substance (protoalkaloid, tropolone alkaloid) from the fruit of red or green chilli pepper.

- **Effect**: It desensitizes sensory nerve endings to pain stimulation.

- For topical use it is formulated as a cream containing 0.025% or 0.75%.
Topical anti-inflammatory

Wintergreen oil حشيشة الشتاء

- Obtained from *Betula lenta*.
- The oil contains methyl salicylate 98% which is produced by enzymatic hydrolysis of the phenolic glycoside during maceration and steam distillation.
- Methyl salicylate has anti-inflammatory effect, it is used in the form of ointment or liniment for muscle pain.
Nocturnal leg cramps

- Night cramps are common in elderly people, particularly in patients with liver disease.
- Quinine is used and it may also be effective in reducing their incidence.
- It presumably acts by decreasing the excitability at the endplate.
- Care should be taken for cardiac toxicity in routine uses.