

Myalgia

Mechanism: Myalgia = muscle pain caused by sensitization of nociceptors by mechanical, inflammatory, ischemic, or metabolic stimuli. It is crucial to distinguish benign causes (muscle soreness, viral myositis, statins, overuse) from severe ones (myositis, rhabdomyolysis, sepsis, malignancy).

Syndromes:

Benign: muscle pain, myofascial pain, viral myositis, benign acute childhood myositis, post-exercise muscle cramp

Inflammatory myopathies: dermatomyositis, polymyositis, inclusion body myositis, immune-mediated necrotizing myopathy, antisynthetase syndrome.

Rheumatological: fibromyalgia, polymyalgia rheumatica, systemic lupus erythematosus, Sjögren's synd., rheumatoid arthritis

Infectious: viral, pyomyositis, post-streptococcal, in systemic borreliosis

Metabolic/toxic: statins, hypothyroidism, hypoparathyroidism, glycogen storage disease, mitochondrial.

Red flags:

Proximal weakness + high CK → idiopathic inflammatory myopathy, IMNM

Dark urine + very high CK → rhabdomyolysis

Fever + swelling + severe pain → pyomyositis / necrotizing fasciitis

Heliotrope rash and Gottron papules → dermatomyositis (in adults, risk of malignancy)

Age > 60 + stiffness + high sedimentation rate → polymyalgia rheumatica / giant cell arteritis

Child: systemic symptoms, night pain, refusal to bear weight → infection / malignancy

Statins + progression → anti-HMGCR IMNM

Examination:

- 1) Muscle enzymes (CK, AST/ALT/LDH; in rhabdomyolysis CK >5× normal) + myoglobinuria, other labs: CRP, TSH, Ca/PTH, CBC+diff, borreliosis, myositis panel (~60% positive).
- 2) EMG: when unclear between myopathy vs. neurogenic pain
- 3) MRI: signs of edema, structural changes, to determine the biopsy site.
- 4) In case of persistent ambiguities, a biopsy: not during acute rhabdomyolysis!

Treatment:

Benign: nonsteroidal anti-inflammatory drugs, hydration, rest, activity modification

Rhabdomyolysis: IV fluids, electrolyte correction

Idiopathic inflammatory myopathy: steroids + methotrexate, azathioprine, intravenous immunoglobulins

Polymyalgia rheumatica: low-dose steroids

Infectious: antibiotics, drainage; borreliosis: doxycycline

Toxic: discontinue the medication; IMNM: immunosuppression

Endocrine/metabolic: hormone correction, dietary regimen, reduction of exercise

Symptomatic: pregabalin, gabapentin, amitriptyline; mexiletine (myotonia), carbamazepine/phenytoin (cramps).

Onset	Adults	Children
Acute / Subacute	Viral myositis, rhabdomyolysis, pyomyositis, necrotizing fasciitis, statin-induced myopathy, endocrine myopathy, post-infectious myositis	Benign acute childhood myositis, viral myositis, infection, malignancy, post-infectious myositis, juvenile dermatomyositis
Chronic	Fibromyalgia, polymyalgia rheumatica, idiopathic inflammatory myopathy, metabolic myopathies	"Growing pains" (benign nocturnal pains), juvenile dermatomyositis, metabolic disorders

Explanatory notes: IMNM -Immune-mediated necrotizing myopathy (IMNM)