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Polymyalgia Rheumatica

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No relevant disclosures

Learning Objectives

University of Manitoba

Participants will have medical knowledge to describe:

- Epidemiology of Polymyalgia Rheumatica (PMR)
- Pathophysiology of PMR
- Evaluation and differential diagnosis for PMR
- Management of PMR

Definition/Overview: PMR

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- ***Difficult diagnosis to make:***
  - ***No specific diagnostic tests; diagnosis based on clinical presentation and evidence of systemic inflammation.***
  - Chronic, inflammatory disorder of unknown cause.
  - Not typically seen in people under age 50 years.
  - Clinically, characterized by pain and long-term morning stiffness affecting neck, shoulders, hips, upper arms, and thighs.
  - Differential diagnosis is broad and clinicians need to consider several disorders that can mimic the disease.

Epidemiology of PMR

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- Disease of the elderly:
  - Peak incidence 70-80 years of age
  - Age >50 is part of the diagnostic criteria.
- Female preponderance: 65-75%
- Risk varies according to ethnicity and geography
- Overall Incidence ~500 cases per 100,000 over 50
  - Highest incidence among northern European whites
  - Lower in southern European populations
  - Markedly lower (rare) in American populations of Asian or African descent
  - Similarly rare in First Nations

Epidemiology of PMR

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- Lifetime risk of developing the disease:
  - ~2·43% for women.
  - ~1·66% for men.
- An onset of disease late in life suggests environmental exposures influence susceptibility factors.
- Socioeconomic status has no noticeable effect.
- Longevity is not reduced.
- Self limited in some, relapses in ~50%, persistent disease in ?~25%.
- Known overlap with Giant Cell arteritis:
  - 50% with GCA have PMR
  - 10% with PMR have GCA

Epidemiology of PMR: *Take home points*

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- Peak age of onset > 75 years, very rare <50 years
  - ***Rethink diagnosis the closer the patient to age 50***
- Primarily a disease of Europeans
  - ***Rethink diagnosis in non-Europeans***

Pathophysiology of PMR

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- Unknown etiology:
- Objective laboratory evidence of inflammation has been described:
  - Interstitial fluids from painful muscles contain high cytokine levels.
  - High serum levels of IL-6 and fibrinogen
  - Macrophages and T cells in the synovium.
- Environmental exposures likely important:
  - Seasonal, cyclical variations implicate infectious agents (e.g., viruses, Mycoplasma pneumoniae) as triggers, although specific pathogens have not yet been identified.

Pathophysiology of PMR

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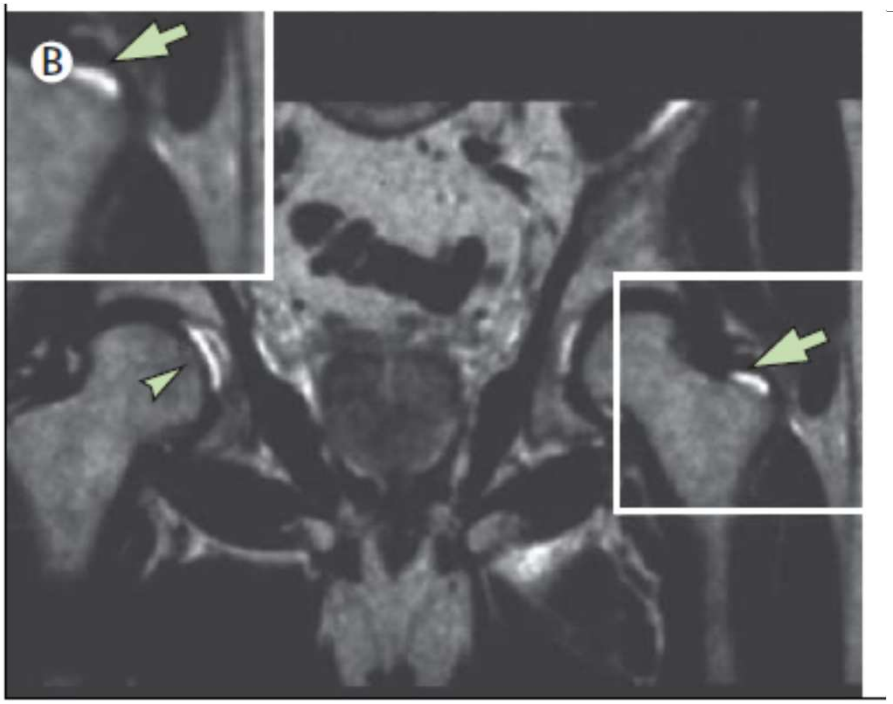
- **Imaging studies demonstrate inflammation of the bursas and periarticular structures.**
- Ultrasound studies with power Doppler show inflammation of intra-articular and extra-articular structures (synovitis and bursitis).
- MRI studies also show synovitis and bursitis. Bilateral subacromial-subdeltoid bursitis and trochanteric bursitis are the most frequent lesions.
- MRI also demonstrates greater involvement of extracapsular structures compared with that seen in RA.
- PET Scanning can also demonstrate widespread inflammation in areas where the disease is not clinically apparent, such as the aorta and proximal branches.

Pathophysiology of PMR



- MRI: An axial T2 weighted section shows trochanteric bursitis (arrows) and joint effusion (arrowhead).

Salvarani C, Cantini F, Hunder GG. Polymyalgia rheumatica and giant-cell arteritis. Lancet. 2008 Jul 19;372(9634):234-45. doi: 10.1016/S0140-6736(08)61077-6. Review. PubMed PMID: 18640460.

Pathophysiology of PMR

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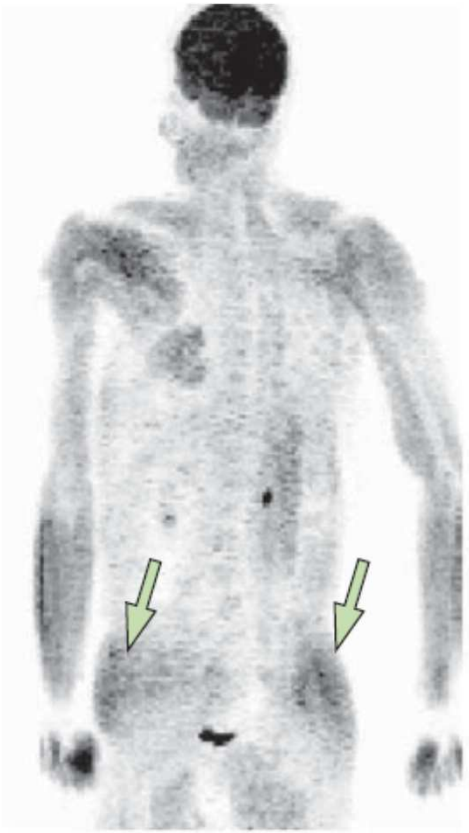
- PET Scan: Fluorodeoxyglucose PET shows inflammatory florodeoxyglucose uptake in the hips (arrows) and absence of vascular uptake.



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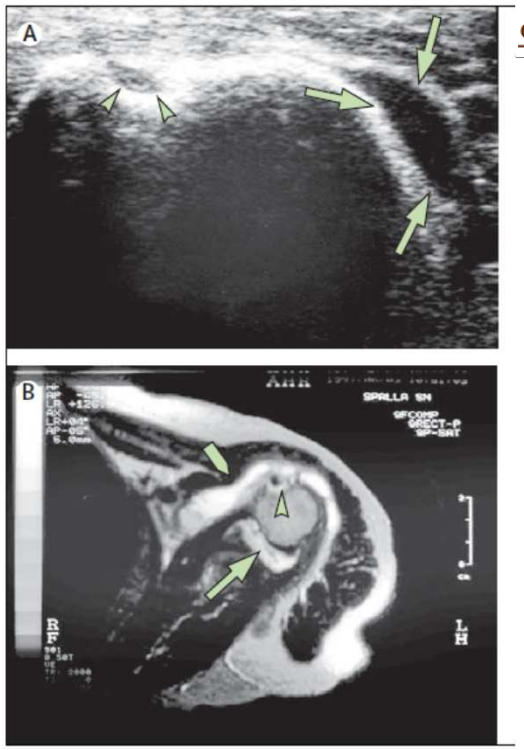
Pathophysiology of PMR

- (A) Ultrasonography shows the presence of fluid within the subacromial bursa (arrows) and surrounding the long biceps tendon groove (arrowheads).
- (B) An axial T2 weighted section shows subacromial and subdeltoid bursitis (pentagon), joint effusion (arrow), and tenosynovitis of the long head of the biceps (arrowhead).



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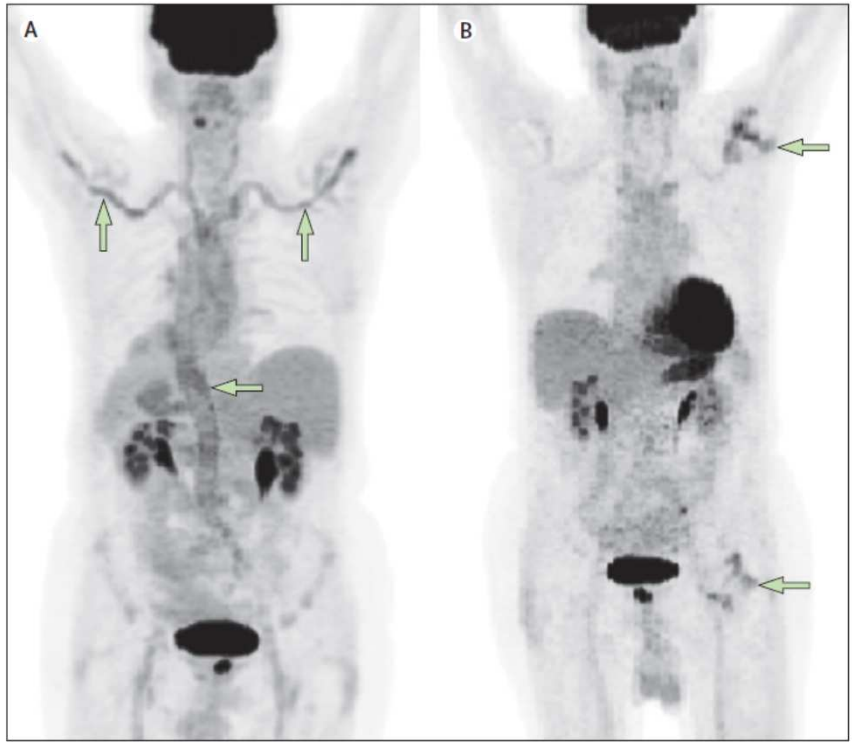
Pathophysiology of PMR



PET in a patient with combined GCA and PMR

- A. Image show intense uptake in the aorta and its branches (arrows) consistent with GCA in a patient with isolated clinical symptoms of PMR.
- B. Several years later the patient had a relapse with symptoms of PMR; PET scan showed mild uptake in the vessels but avid uptake in the left shoulder and left hip (arrows) consistent with inflammation.

Kermani TA, Warrington KJ. Polymyalgia rheumatica. Lancet. 2013 Jan 5;381(9860):63-72. doi: 10.1016/S0140-6736(12)60680-1. Review.

Pathophysiology of PMR: *Take Home Points*

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- Objective findings of inflammation in periarticular tissues and muscles has been demonstrated
  - Currently of no practical value
  - Point of care ultrasound may be available/useful in the near future

Evaluation & differential diagnosis for PMR

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- **Clinical diagnosis- depends on a combination of:**
  - **Clinical symptoms of inflammation**
  - **Raised acute-phase reactants**
  - **Exclusion of other diseases**
  - ***Response to glucocorticosteroids.***

Evaluation & differential diagnosis for PMR

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- **Provisional ACR–EULAR classification criteria for polymyalgia rheumatica**

Mandatory criteria:

- Age ≥50 years
- Aching in both shoulders
- Abnormal C-reactive protein level, ESR, or both

Scoring:
In addition to the mandatory criteria, there must be a score of 4 or more points for additional criteria (without ultrasound)

Additional criteria†

- Morning stiffness lasting >45 min (2 points)
- Hip pain or reduced range of motion (1 point)
- Negative rheumatoid factor or antibodies to cyclic citrullinated peptides (2 points)
- Absence of peripheral synovitis (1 point)

Ultrasonographic findings

- At least one shoulder with subdeltoid bursitis, biceps tenosynovitis, or glenohumeral synovitis, or at least one hip with synovitis or trochanteric bursitis (1 point)
- Subdeltoid bursitis, biceps tenosynovitis, or glenohumeral synovitis in both shoulders (1 point)

Evaluation & differential diagnosis for PMR

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- **Clinical Features:**
  - ***History supporting Inflammation:***
    - **Morning stiffness of 45 minutes or more, often profound**
    - **Difficulty getting out of bed, often require help**
    - **Difficulty with ADLs**
  - **Constitutional symptoms:**
    - **Fever, night sweats, anorexia, depression, malaise**
    - **Weight loss if severe**
  - **Pain and stiffness in shoulder and/or pelvic girdle**

Evaluation & differential diagnosis for PMR

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- **Clinical Features:**

Physical Exam mostly negative

- Affected muscle groups ***may*** be TENDER but ***not*** WEAK
- No synovitis
- Normal range of motion
- No deformity
- Subset of patients can present with swelling and pitting edema of the hands and feet due to tenosynovitis (puffiness of hands and feet)

Evaluation & differential diagnosis for PMR

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- **Clinical Features:**

Laboratory Investigations

- **↑ESR and/or CRP**
- Anemia of chronic disease
- Low albumin, high ferritin

Evaluation & differential diagnosis for PMR

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- **Differential Diagnosis:**
  - **Evaluation also needs to be directed at excluding other diseases**

Broad differential, including OA, metabolic, drug induced, depression, endocrine Laboratory Investigations

- **↑ESR and/or CRP**
- Anemia of chronic disease
- Low albumin, high ferritin

- Revisit alternative diagnoses if poor response to glucocorticoids

Evaluation & differential diagnosis for PMR

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Differential Diagnosis:

<u>Giant Cell Arteritis</u>

- **Headache, neck pain, visual disturbances**
- **Scalp tenderness**
- **Dilated temporal arteries**
- **Jaw pain, tongue or jaw claudication**
- **→temporal artery biopsy**

Evaluation & differential diagnosis for PMR

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Differential Diagnosis:

RA

- **Can present with very similar findings**
- **RF/anti-CCP points to RA, not PMR**
- **Peripheral synovitis makes PMR unlikely**
- **Expect more *joint* tenderness in RA**
- **Reduced range of motion suggests RA**

Evaluation & differential diagnosis for PMR

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Differential Diagnosis:

<u>ANCA-Associated, Polyarteritis Nodosum, other Vasculitis</u>

- **Can have associated PMR-like prodrome**
- **Renal involvement: active urinary sediment, increased creatinine**
- **Pulmonary involvement: hemoptysis, abnormal CXR**
- **Neuropathy**
- **Palpable purpura**
- **→Urinalysis, ANCA, PR3/ MPO, +/-CXR**

Evaluation & differential diagnosis for PMR

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Differential Diagnosis:

<u>Malignancy Associated</u>

- **Weightloss**
- **"sick"**
- **Reconsider if poor response to steroids**

Evaluation & differential diagnosis for PMR

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Investigations:

- **CBC**
- **ESR and/or CRP**
- **Creatinine, urinalysis**
- **RF, anti-CCP, ANCA, PR3, MPO**
- **Consider CXR**
- **→Temporal artery biopsy only if GCA suspected**

Evaluation & differential diagnosis for PMR: *Take Home Points*

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- **Increased acute phase reactants are key: check ESR & CRP**
- **Unexciting physical exam**
- **Consider other inflammatory diagnoses on history, exam and work-up**

Management of PMR

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- **Corticosteroids usually provide immediate relief**
  - **Pathognomonic dramatic rapid response**
- Start Prednisone **15-20 mg** daily
  - Do not use higher doses
  - ***Absence of response suggests alternate diagnosis***
- Taper once Symptoms & ESR/CRP are stable (2-4 weeks)
  - Then taper by 2.5 mg every 2-4 weeks to 10 mg daily
  - Then taper by 1 mg every 2-4 weeks to 5 mg daily
  - Then SLOW taper till off (18-24 mo)

Management of PMR

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- **To prevent bone loss**
  - **Calcium w/ Vitamin D**
  - **Bisphosphonates**
- For patients who are very high risk for Corticosteroids

  OR
  - Who have repeated relapse with tapering:

  Consider methotrexate or azathioprine
    - Weak evidence
- **Tocilizumab (IL-6 Inhibitor) recently found to be effective for GCA in RCTs- may be an option for relapsing PMR as well**

Management of PMR: Take Home Points

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- **Peak age of onset > 75 years, very rare <50 years**
  - Rethink diagnosis the closer the patient to age 50
- **Look for evidence of Inflammation**
  - If ESR/CRP normal, rethink diagnosis
- **Pathognomonic dramatic rapid response to low(ish) prednisone dose**
  - Rethink diagnosis if inadequate response to steroids
- **Plan on 1- 2 years of treatment**
- **Good long term prognosis**

Polymyalgia Rheumatica & You

http://RheumInfo.com
your rheumatology resource

What is it?

Polymyalgia rheumatica (PMR) is an inflammatory condition that causes pain and stiffness in the shoulders and the hips. It can be mistaken for rheumatoid arthritis (RA). The difference is that PMR only affects the joints surrounding the shoulders and hips whereas RA can affect other joints.

The good news is that PMR is a self-limited disease in about half of cases. That means it goes away by itself after a few months to a couple of years. But in other people, PMR is more chronic (long-term) and can linger for much longer.

The exact cause of PMR is not known at this time. It occurs more often in women than men and usually in people who are in their 50s or older.

PMR is like a fire in your joints caused by inflammation

The word inflammation comes from the Latin word *inflammare* which means to light on fire. You can think of PMR like a fire in the joints of your shoulders and hips, and in some cases the temporal arteries. Putting out the fire of PMR early is important. You want to get that fire out as quickly as possible so it doesn't cause damage. Once the damage from PMR is done it cannot be reversed.

Treating PMR aggressively is also essential. Using the same fire analogy, we've called in the fire department. Now we need to make sure we have the right tools to put out the fire. We don't want a bucket and water. We want a fire truck with a big hose. The faster we can get that fire out the less damage is done and the better things will be in the long run.

What is it going to do to me?

PMR tends to come on suddenly, sometimes overnight. One day you feel fine, and over a few days you develop intense pain and stiffness in the shoulders and hips. This tends to be worse in the morning or after a period of rest. In some people, pain and stiffness gets better once the joints get "worked out." In other people, it can last all day.

Most people who develop PMR also suffer from significant fatigue.

PMR can also occur with a condition called temporal arteritis. This means inflammation of the arteries along one or both sides of the head (along the temples). This can lead to headaches or pain along the temples. In the worse cases, the arteries leading to the eyes can be affected. This can cause blurry vision or vision loss.

Visit RheumInfo.com

RheumInfo.com is a free educational website where you can learn more about PMR and treatments for the disease. The website is operated by Dr. Andy Thompson, a rheumatologist.

What can I do about it?

The first thing is don't panic. Take a deep breath. Although you might have been diagnosed with PMR, you are not alone. Luckily, there are effective treatments available. They can make living with the condition much more comfortable.

PMR can be fully and effectively treated with the right therapy. Prednisone is the main medication used to treat PMR. It works by fighting the inflammation caused by PMR. Once the symptoms of PMR are under control, the dose of prednisone is gradually reduced. People with PMR usually have to continue taking a low dose of prednisone for at least 1 year to prevent the inflammation from returning.

Other medications may also be recommended instead of or in addition to prednisone. These include Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) for inflammation and pain. Non-prescription analgesics like acetaminophen (Tylenol) can also help relieve pain. Disease-Modifying Anti-Rheumatic Drugs (DMARDs) such as methotrexate or hydroxychloroquine (Plaquenil) can help reduce the dose of prednisone that's needed.

Physical therapy and exercise are important. They can improve pain and stiffness, reduce fatigue, and help protect the joints. They should be done daily to derive the maximum benefit.

Here are some other recommendations on what you should do:

- **Learn as much as you can about the disease**
- **Attend your medical appointments regularly**
- **Learn about joint protection from a physiotherapist or occupational therapist**
- **Learn about the medications used to treat PMR**

Flesch-Kincaid Reading Grade: 10.1

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Patient education

References

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Thank you

Questions?