General practitioner information on sporadic inclusion body myositis (sIBM)

Introduction: Sporadic **inclusion body myositis** (sIBM) is a poorly understood, rare, relentlessly progressive idiopathic multifactoral disorder of skeletal muscle cells for which no reliably effective treatment exists. Weakness of skeletal muscles develops slowly over months or years, eventually leading to severe weakness and atrophy of both proximal and distal muscles.
Incidence: sIBM is an age-related disease, usually appearing after age 50. It is the most common acquired muscle disorder seen over 50 although about 20% of cases display symptoms before 50. It is more common in men, (2 to 3 to 1). In a recent study its prevalence was 15 per million in the overall population, with a prevalence of 51 per million population in people over 50 years of age.
Presentation: Age of onset may vary from the early forties on, the pattern of muscles involved may vary and the rate of progression of sIBM may also vary widely. The quadriceps and leg muscles are often affected first, thus falling and tripping (due to toe drop) are common first seen symptoms of IBM. For some, IBM begins with weakness in the wrists and fingers causing difficulty pinching, buttoning, and gripping objects. Weakness of the shoulder, arm, wrist and finger muscles and atrophy, including of the forearm muscles and quadriceps muscles is characteristic. Associated pain is seldom noted in the literature but commonly reported by patients. Occasionally dysphagia, skin or ocular, facial or respiratory muscle involvement, fatigue or pain in joints is noted. sIBM commonly leads to major or "total disability" within 10 to 15 years of symptom onset, necessitating mobility aids such as a wheelchair.
Differential diagnosis: sIBM is often initially misdiagnosed as polymyositis. A course of prednisone is typically completed with no improvement and eventually sIBM is confirmed. sIBM weakness comes on over months or years and progresses steadily, whereas polymyositis has an onset of weeks or months. Other forms of muscular dystrophy (e.g. limb girdle) must be considered as well.
Diagnosis: Serum CK levels are normal or slightly raised (at most ~10 times normal). Electromyography (EMG) studies usually display abnormalities. Muscle biopsy may display several common findings including; inflammatory cells invading muscle cells, vacuolar degeneration, inclusions or plaques of abnormal proteins. sIBM is a challenge to the pathologist and even with a biopsy, diagnosis can be ambiguous.
Treatment/management: No therapy has been reliably effective. Corticosteroids, cytotoxic-immunosuppressive agents, anti-TNF (tumor necrosis factor) agents, interferon beta, and intravenous gamma globulin, have all been tried. In some cases, there have been modest gains, but overall there has been no dependably effective therapeutic approach to this disorder. Some authors suggest a therapeutic attempt with IVIG over 6 months. Management is symptomatic. Prevention of falls is an important consideration. Nutrition is a concern when dysphagia is present as patients commonly curtail their food intake.
Complications: In up to 85% of cases, patients develop progressive dysphagia. Dysphagia is a significant cause of death from respiratory complications associated with aspiration pneumonia. Respiratory function may be compromised by diaphragmatic involvement causing paradoxical breathing and reduced lung volumes, especially at night, raising levels of carbon dioxide in arterial blood. (addressed well using a bi-pap machine).
Genetics: sIBM is not inherited but has an association with the major histocompatibility complex (MHC), a group of genes associated with immune function; present in ~75% of sIBM cases. HLA alleles are determinants of disease and may also have modifying effects on phenotype; certain HLA-DRB1 allele combinations can influence the age-at-onset and severity of sIBM.
Pathology: sIBM muscle is commonly said to display two major features occurring in parallel: 1) autoimmune (muscle fibres express MHC-I antigens triggering invasion by CD8+ lymphocytes) and 2) a degenerative process with accumulation of pathological proteins within the muscle cell. Proteins found in inclusion bodies may include amyloid precursor protein, beta amyloid, presenilin1, sequestosome1 (p62), TAR DNA binding protein-43 (TDP-43), ubiquitinated-proteins, apolipoprotein E, alpha-synuclein and phosphorylated tau. Claims that IBM is associated with beta amyloid precursor protein, beta-amyloid and phosphorylated tau have recently been questioned by Greenberg as inconsistent with research evidence. No cause or trigger event has been established for sIBM but it is thought to involve a complex interplay between environmental factors, genetic susceptibility and aging.

References: Please see http://www.ibmmyositis.com for further information and references, 08/2009.