P049 SKELETAL MUSCLE INVOLVEMENT IN COVID-19 INFECTION: A CASE REPORT AND SYSTEMATIC REVIEW

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Background/Aims
It is increasingly understood that COVID-19 has a very broad range of multi-system manifestations. Myalgia is a widely publicised feature of SARS-CoV-2 infection, however, more severe muscle injury can occur.

Methods
A systematic search for terms related to “SARS-CoV-2” and “myalgia”, “myositis”, “rhabdomyolysis” or “muscle” was performed across four search engines (Web of Science, Pubmed, Medar and Medrxiv) on 10/09/2020. Only original research published or translated in English was included. Information relating to skeletal muscle injury in confirmed SARS-CoV-2 infection was summarised.

Results
The search protocol identified 980 articles of which 200 were appropriate for abstract review. 21 case reports covering 22 patients with rhabdomyolysis were found. Other muscular pathology not defined as rhabdomyolysis by authors, included 1 case of acute myositis leading to compartment syndrome, 2 cases of myositis with classical proximal weakness, elevated creatine kinase and proximal muscle oedema on imaging, and one series of 7 patients with paraspinal myositis on MRI imaging. A histopathological study found evidence of incidental myositis in 2 cases. Critical care myopathy and polyneuropathy are described, along with many other neurological manifestations. While 91 cohort studies were identified, none looked in detail at skeletal muscle involvement. There are 8 meta-analyses which find the prevalence of myalgia between 19-33%. The age of rhabdomyolysis patients appears lower than expected for covid-19 admissions at 46.7 years, but ranged from 16 to 88. Baseline characteristics mirror those at higher risk of severe covid-19: half had either hypertension, type 2 diabetes or obesity and 86.4% were male. Common accompanying symptoms were myalgia (81.8%), fever (68.2%), cough (59.1%), dyspnoea (40.9%). Median peak CK was 22,511U/L. 68.2% had changes consistent with covid-19 on chest imaging. Intravenous haemofiltration or mechanical ventilation were each required by 4 patients. Short term prognosis showed 18 (81.8%) being discharged, 2 deaths (9.1%) and 2 unknown outcomes.
Conclusion
Severe skeletal manifestations such as rhabdomyolysis occur in covid-19. More research is needed to discover if this is through direct viral invasion of the tissues, or indirectly via systemic cytokine release, hyperlactataemia and hypo-oxygenation. CK should be routinely checked in those critically unwell or with severe myalgia or weakness to identify treatable rhabdomyolysis early. Chronic autoimmune conditions such as the idiopathic inflammatory myopathies may have viral environmental triggers, and one case tested positive for a myositis specific antibody. Whether patients with acute covid-19 related myositis experience ongoing long-term muscle inflammation has not yet been reported.

Disclosure
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