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| **Title:** | **Is there an association between metabolic syndrome and rotator cuff related shoulder pain? A systematic review** |
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| Text: | **Purpose:**Rotator cuff related shoulder pain (RCRSP) is a prevalent complaint of the upper limb with growing research suggesting a possible relationship between cardiometabolic risk factors.  This study aimed to systematically review case-control, cross-sectional and cohort studies investigating the association between metabolic syndrome (MetS) and RCRSP.  **Methods:**A systematic review of observational studies of adults was conducted. Five medical databases (MEDLINE, EMBASE, SCOPUS, CINHAL and AMED) and citation tracking methods were used to identify all relevant English articles that considered MetS and RCRSP. Studies were appraised using the Newcastle Ottawa Scale (NOS). Two reviewers performed critical appraisal and data extraction. Narrative synthesis was performed via content analysis of statistically significant effects expressed as odds ratio (OR) with confidence interval (95% CI).  **Results:**Three cross-sectional, two case control and one cohort study met the inclusion criteria, providing a total of 1,187 individuals with RCRSP. Heterogeneity in methodology and RCRSP or MetS definition precluded meta-analyses. Four of the included studies identified associations between the prevalence of MetS and RCRSP. Studies consistently identified independent cardiometabolic risk factors associated with RCRSP. All studies were level III evidence.  **Conclusion(s):**The results of this study suggest an association between MetS and RCRSP. Most studies show moderate risk of bias. The direction of association and cardiometabolic factors influencing should be investigated by longitudinal and treatment studies. These preliminary conclusions and clinical utility should be treated with significant caution due to limitations of the evidence base.  **Implications:**-There is low-moderate quality evidence for a positive association between MeTs and rotator cuff related shoulder pain - While causality has not been established, associations between low-grade inflammatory biomarkers and RCRSP have been shown - It remains to be demonstrated if the impact of MetS exceeds the sum of all its individual risk factors (central obesity, dyslipidaemia, hypertension and insulin resistance) - People with MetS are potentially at higher risk of shoulder pain, rotator cuff tears and more severe rotator cuff tears |