#71 - Systematic Review

Low- And High-Risk Bone Stress Injuries: More Evidence To Help Guide Clinical Decision-Making. A Systematic Review And Meta-Analysis Of 76 Studies

Orthopaedics / Foot & Ankle / Miscellaneous

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Background
It is believed that site of injury determines treatment complications and return to sports (RTS) after bone stress injuries (BSIs). In clinical practice, BSIs are commonly classified as being at low- or high-risk for complication based on site of injury. However, this dichotomous approach has not been scientifically proven to date.

Objectives
To evaluate the prognostic value of injury location on time to RTS, rate of RTS and treatment complications after BSIs of the lower extremity and pelvis.

Study Design & Methods
PubMed, Web of Science, Cochrane Library and Google Scholar were systematically searched for studies reporting on RTS after BSIs. Assessment of risk of bias was carried out using the Methodological Index for Non-Randomized Studies (MINORS). Meta-analyses were performed to summarize mean time to RTS, rate of RTS and treatment complications.

Results
The search yielded 76 studies reporting on 2974 BSIs. Sixteen studies compared multiple injury sites, and most of these studies (n=11) described the anatomical site of injury as being prognostic for RTS or rate of treatment complication. Pooled data revealed the longest time to RTS for BSIs of the tarsal navicular (127 days; 95% confidence interval [CI], 102-151 days) and femoral neck (107 days; 95% CI, 79-135 days), and shortest duration of time for BSIs of the posteromedial tibial shaft (44 days, 95% CI, 27-61 days) and fibula (56 days; 95% CI, 13-100 days). Treatment complication rate was highest in BSIs of the femoral neck, tarsal navicular, anterior tibial shaft, and fifth metatarsal; and lowest in fibula, pubic bone, and posteromedial tibial shaft.

Conclusions
This systematic review provides support that anatomical site of injury is important to characterize in the management of BSIs. In particular, BSIs of the femoral neck, anterior tibial shaft, and tarsal navicular have an increased rate of complications and are more challenging regarding RTS.