

AB218. 12. A literature review on the effectiveness of prehabilitation on post-operative outcomes for anterior cruciate ligament deficient knees

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Background: Anterior cruciate ligament (ACL) injuries are a common reason for undergoing surgery. An ACL-deficient knee has been associated with pain, reduced quadriceps strength, neuromuscular dysfunction and poor proprioception, biomechanical mal-adaptations, and an overall reduction in knee function. As such, there is an increased risk of reduced ambulatory function and osteoarthritis in ACL-deficient knees. It is well known that post-operative physiotherapy for ACL reconstruction is beneficial in the management of ACL injuries, but the literature is lacking on whether there are benefits to patients who participate in pre-operative physiotherapy (prehabilitation). Thus, a literature review of the evidence for the effects of prehabilitation on post-operative outcomes for ACL reconstruction was completed

Methods: The electronic databases EBSCO and Medline were searched, from inception to July 1, 2018. Literature

on the topic of prehabilitation were identified through the MESH/keywords: prehabilitation. Research reports and other articles that were excluded included single case reports, duplicates, animal studies, and those articles that did not focus on prehabilitation. Additional studies were added based on preliminary readings and reviewing the references in these readings.

Results: Of 47 citations identified by the search strategy, a total of 14 studies or other articles were initially deemed eligible for this review. Upon closer inspection, only 12 of the studies contained post-operative results; the literature varied from clinical and narrative reviews, an editorial, and clinical cohort or randomized control studies.

Conclusions: In patients undergoing ACL reconstruction surgery, there may be beneficial effects from undergoing prehabilitation. These effects include increased quadriceps strength, improved gait, facilitating return to sport, improved patient reported outcomes, and possible decreased need for surgery. No harmful effects of prehabilitation were found, although the cost-benefit ratio of prehabilitation was not discussed. Thus, adequately powered randomized control trials are needed to further establish the immediate and long-term effects of prehabilitation in patients undergoing ACL reconstruction.

Keywords: anterior cruciate ligament (ACL); orthopaedics; prehabilitation; pre-operative rehabilitation; rehabilitation

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