OBJECTIVES

The vast majority of research on medial collateral ligament (MCL) and lateral collateral ligament (LCL) injuries has focused on adult populations with combined collateral/cruciate injuries. The purpose of this study was to determine patient and injury characteristics associated with isolated (non-ACL or PCL associated) collateral ligament injuries in adolescents. Secondary aims included determining the time to return to sports (RTS) and identifying risk factors for prolonged RTS, reinjury, and continued pain in this population.

We hypothesized that patients with higher grade injuries have a longer RTS time and increased risk of continued pain and reinjury.

METHODS

All patients ≤19 years-old who sustained an MRI-confirmed isolated MCL or LCL injury between 1/2005 and 1/2012 were included. Those with associated high-grade cruciate ligament tears were excluded. Medical records and MRIs were retrospectively reviewed to document demographic and injury characteristics. General linear modeling was used to analyze risk factors for prolonged time to RTS, continued pain, or reinjury.

RESULTS

Sixty knees (38, 63% male) in 57 patients, mean age 14.4 range (5-19), were identified, the majority of which (n=48, 80%) sustained MCL injuries. Twelve patients (20%) sustained LCL injuries, including four (7%) with concurrent injuries to other structures of the posterolateral corner (PLC). Forty-nine (82%) of the injuries occurred during sports. Twelve knees (25%) with MCL tears had a simultaneous patellar instability episode. Multivariable analysis determined that knee injuries that occurred during sports had 35% shorter recovery time (p=0.04). Nine patients (15%) experienced a reinjury and fourteen (23%) were followed for continued pain. Football injuries were more likely to be grade 3 than other sports (p=0.02), and football and soccer accounted for all grade 3 injuries. Knees injured on grass had nearly four times the odds of a higher grade injury (p=0.02) and patients with history of a prior injury had 80% lower odds of a higher grade injury (p=0.03).

CONCLUSIONS

The majority of isolated collateral ligament injuries in children and adolescents are contact athletic injuries that occur on grass and involve the MCL. Football and soccer injuries tended to be higher grade while injuries from skiing and wrestling or in patients that had a prior knee injury tended to be lower grade. Conservative treatment with bracing and physical therapy is standard and sufficient except in rare cases. Sports-related injuries had a quicker time to return to sport. One quarter of MCL injuries had associated imaging findings on MRI consistent with a lateral patellar instability event.