ABSTRACT

*Purpose/Background:* Strength asymmetries are related to knee injuries in intermittent sports players. The purpose of this study was to examine whether elite futsal players demonstrate strength asymmetries during knee isokinetic testing applying the Croisier et al. criteria.

*Methods:* Forty male elite (27.9 ± 6.5 years) Brazilian futsal players participated in the study. The testing protocol required players to perform concentric contractions of both quadriceps and hamstring muscles at angular velocities of 60° · s⁻¹ and 240° · s⁻¹ and eccentric contractions of hamstring at 30° · s⁻¹ and 120° · s⁻¹. Conventional (concentric:concentric) and mixed (eccentric:concentric) hamstrings/quadriceps (H/Q) ratios were calculated. Subjects were determined to have an imbalanced strength profile if an athlete had at least two parameters that were asymmetrical across speeds and conditions. Asymmetry was operationally defined as peak torque asymmetry greater than 15% in bilateral comparison, and H/Q ratio less than 0.47 for conventional and 0.80 for mixed conditions.

*Results:* Significant differences were observed between preferred and nonpreferred limbs in the concentric contractions of flexors at 240° · s⁻¹ and eccentric contractions of extensors and flexors at 30° · s⁻¹ and 120° · s⁻¹. However, these asymmetries did not exceed 15%. The conventional and mixed H/Q ratios were greater in the preferred than in nonpreferred limbs, but only the mixed hamstrings/eccentric:quadricepsconc in the nonpreferred limbs showed values lower than recommended (< 0.80). In addition, 50% of elite futsal players had preseason strength imbalances per the developed criteria.

*Conclusion:* The studied elite futsal players had preseason strength imbalances, which may increase the risk of hamstring injuries.

*Level of evidence:* 3

*Key words:* Asymmetry, injury risk, isokinetic, peak torque.