MEDICAL AND PERFORMANCE TRENDS IN REPEAT IRONMAN-DISTANCE TRIATHLON COMPETITORS AT THE IRONMAN WORLD TRIATHLON CHAMPIONSHIPS

Ironman-distance triathlon events are rigorous three-sport ultra-endurance competitions and often result in various adverse medical incidents among competitors. The overall purpose this thesis is to examine medical and performance trends for Ironman-distance triathlon competitors over three decades. Standardized data sheets developed by race medical personnel and administrators were completed by registered nurses and physicians upon athlete check-in to the medical tent at the event between the years of 1989-2019. Medical trends were investigated for a repeat competitor population and competitors (n=427) were included for analysis within the current investigation if admitted to the tent for at least three competitions within a fifteen-year span. The performance trends investigation included all competitors (n=9446) that received medical attention at the Ironman World Championships from 1989-2019. For medical trends among repeat competitors, significant associations were found between several adverse medical incidents for competitors' first visit and for all 3+ year competitor visits. Additionally, repeat athletes experiencing hyponatremia (OR=2.59, 95% CI: 1.17-5.74), nausea (OR=1.89, 95% CI: 1.20-2.98), and muscle cramps (OR=1.61, 95% CI: 1.06-2.46) during their first year had a significantly
higher risk of returning with the same medical problem in subsequent years. Contrarily, participants that experienced vomiting during their initial visit were less likely to return for the same problem in subsequent years (OR=0.50, 95% CI: 0.31-0.83). For performance trends, significant differences were found between the category of an athletes’ primary adverse medical incident and finisher status. Athletes that experienced a primary adverse medical incident in the GI distress (OR=0.62, 95% CI=0.50-0.77), dehydration (OR=0.77, 95% CI=0.65-0.91), and dizziness (OR=0.29, 95% CI=0.21-1.41), categories had a significantly higher risk of not finishing the race when compared to those with primary medical incidences in other categories. Additionally, seeking medical attention for hyponatremia significantly decreased performance but seeking medical attention for muscle cramps significantly increased performance for all groups except for the 50+ age group. Analyses of other triathlon populations and additional medical variables are needed.