AAN 77th ANNUAL MEETING ABSTRACT

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Abstract Title: Over-the-counter analgesic use after concussion: Findings from the Concussion Assessment, Research, and Education (CARE) Consortium

Press Release Title: Over-the-counter pain relievers linked to improved recovery from concussion

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Objective: To determine if postinjury over-the-counter (OTC) analgesic use, along with type and timing of medications is associated with concussion recovery and symptom severity in National Collegiate Athletic Association (NCAA) athletes and military cadets.

Background: OTC analgesics have been shown to reduce neuroinflammation after traumatic brain injury (TBI). However, there is little evidence-based research evaluating the effect of OTC analgesics on clinical outcomes after concussion.

Design/Methods: This prospective cohort study was conducted by the NCAA and US Department of Defense CARE Consortium. Participant groups were categorized as those who did and did not use OTC analgesics postinjury. OTC analgesic type was categorized as acetaminophen (n=660) vs non-steroidal ani-inflammatory drugs (NSAIDs) (n=75) vs both (n=78). Concussion recovery was measured as days from injury to clearance to return to unrestricted play (URTP) and to return to asymptomatic (daysASYMP). Symptom and headache severity were derived from the Sports Concussion Assessment Tool (SCAT-3) and taken at baseline (preseason), immediately postinjury (< 1-day postinjury), and postinjury (median of 3 days postinjury).

Results: There were 813 who did and 848 who did not use OTC analgesics included in the study. OTC analgesic use was associated with faster URTP, sooner daysASYMP (HR 0.796, 95% CI 0.697 to 0.909, p <0.001and HR 0.851, 95% CI 0.744-0.972, p=0.034 respectively) and lower postinjury symptom and headache severity scores (logarithmic transformed Estimated Mean difference -0.957 95% CI -0.944 to -0.959, p<0.001 and -1.07 95% CI -1.06 to -1.08, p<0.001 respectively). Earlier OTC analgesic use after injury was associated with quicker URTP and daysASYMP (p<0.001). There were no significant differences among OTC analgesic type and concussion recovery or symptom severity.

Conclusions: OTC analgesics were associated with improved concussion symptoms and recovery. This was not dependent on medication type. Early medication use was associated with shorter recovery times. These findings can enhance our knowledge of treatments for concussion.

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