Concussion at presentation to primary care vs. specialist: Possible implications for management (Poster)

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Concussion at Presentation to Primary Pediatric Care vs. Specialists: Possible Implications for Management

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Introduction
The published estimates of the annual number of pediatric concussions in the United States vary by definition.14 When considering all children under 18 years of age with sports and recreational concussions, one does not see a quiet sea setting, the estimate is as high as 1.1 to 1.9 million annual occurrences15 in a study of emergency room visits. Patients under 17 years old between 2002 and 2006, the estimate was 144,000 annual visits for pediatric concussions.16 During the interval between 2001 and 2009, the CDC reported an average of 122,112 annual ER visits for patients diagnosed with concussions between the ages of 10-14.17 Clearly, not all pediatric concussions are seen in ERs. For example, Arbogast reported that 81.9% of concussed patients under 17 years old were not seen in an ER but in primary care pediatric physicians (PCPP).15 As such, it is likely that in many locations, PCPPs see the majority of patients who seek care outside the emergency room.13

A number of observational studies examining the benefit of cognitive rest (CR) have been conducted. However, these studies are subject to confounding factors, including patient selection and follow-up. For example, there is limited RCTs studying the relationship between CR and return to school.18 Perhaps the guidelines written by specialists do not apply to the PCPP. Cognitive rest and school return may not be applicable to the general population of concussion patients.18

Given the lack of randomized controlled trials (RCTs) evaluating the management approaches to concussion, guidelines for management are based on clinical experience, of which the majority have been written primarily by specialists treating the concussed patient, either in an ER or referred to the specialist by the ER or the PCPP for ongoing care.18,19 Therefore, an assessment of the relevance of these guidelines to the patient population seen initially by the PCPP should take into consideration any differences between the population of patients seen and followed by specialists versus those seen in the ER and followed primarily by the PCPP, many of whom are not referred for specialty care. To explore the differences between the population of concussed pediatric patients managed at the PCPP, we collected data on the characteristics of patients seen at a specialty clinic, we collected data on the characteristics of patients seen at a sports medicine clinic and a pediatric concussion clinic in a tertiary medical center and compared those to data collected at a PCPP serving an overlapping catchment area.

Methods
Patients presenting with a concussion to the PCPP of one of the authors (BT) located in Cherry Hill, NJ, were enrolled prospectively from 12/2011 to 4/2013. Data collected were the basis for two previously published observational studies.20-24 For comparison, two specialty clinics involved with concussion care in the Cooper University Health System, Camden, NJ agreed to participate in this study: 1) the Sports Medicine Clinic, designed to care for sports-related concussions, and 2) the Pediatric Concussion Clinic, designed to see patients with concussions sustained from non-sports activities or non-athletes.25 These specialty clinics saw patients from seven locations in southern NJ, including Cherry Hill and a similar catchment to the PCPP All the clinics offer the same electronic medical record system. The medical records for all patients seen in these two clinics with an IC9 billing code for concussion between August 2015 and May 2017 were collected. In the PCPP and both clinics, patients were included if 11–19 years old, not in college, and sustained injuries which resulted in concussion meeting the definition of the 4th International Consensus Statement on Concussion25. Patients were excluded if they were hospitalized overnight or had abnormalities on CNS imaging. Patients were considered at risk if they were not participating in sports and had not returned to school including weekends prior to being seen. Immediate CR was defined as having at least 24-hours of CR immediately following the injury. At this age, gender and grade were collected along with time from injury to visit, and period of either immediate or subsequent CR. This study was approved by the Institutional Review Board of Cooper University Health System.

Discussion
• Patients presenting to a PCPP are seen sooner after their injury compared to specialists (median 2 days vs. 10 days).
• Specialist typically see patients referred on ER or PCPP, likely because of persistent symptoms.
• More PCPP patients vs. specialty clinics had immediate cognitive rest after injury (61.4% vs. 27.9%) in the specialty clinic.
• There are limited RCTs analyzing the relationship between CR and return to school.

Conclusions
• Specialists and PCPPs differ in types of pediatric concussion patients who present at different time periods after their initial injury.
• Perhaps the guidelines written by specialists do not apply to the patients primarily managed by their PCPP.
• More RCTs are needed to properly identify the differences between these two patient populations, and how to best return these managed by PCPPs to academics and athletics.

References