

was performed, which focused on examining cartilage thinning, joint space narrowing (JSN), and osteophytes (OST).

Results: There was a positive correlation between the KL grading and US findings regarding JSN and OST. There was a positive correlation between AUSCAN score, cartilage thinning, OST, and JSN. There was a negative correlation among grip strength, cartilage thinning, and OST. Regarding clinical correlations, Heberden nodes correlated with underlying distal IP cartilage thinning, OST, and JSN. When comparing the 2 subgroups of patients, patients with both IP and first CMC joint involvement experienced significantly higher levels of pain and disability, and had weaker pinch strength.

Conclusions: US demonstrated a range of changes that involved the hyaline cartilage. It revealed correlations between radiologic abnormalities and clinical findings, such as nodes, pain, and decreased grip strength. The increased detection of OA structural pathology by US may make this a useful tool for hand OA research.

BRAIN INJURY

Poster 89

Changes in U.S. Acute Care Hospital Traumatic Brain Injury Discharges 1998-2008.

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Disclosures: E. Bodofsky, none.

Objective: To determine changes in discharge patterns for traumatic brain injury (TBI) inpatients.

Design: A review of data from the Healthcare Utilization Project (HCUP) Survey.

Setting: A stratified random survey of all acute care hospital discharges in the United States.

Participants: Sampled discharges from U.S. acute care hospitals in 1998 and 2008.

Interventions: None.

Main Outcome Measures: Changes in number of discharges and type of discharge overall and by gender and age.

Results: The number of acute care TBI discharges rose 26%, from 154,076 to 194,609 between 1998 and 2008 ($z=2.58$, $P=.01$). This increase was entirely in older patients, with an increase of 108% in those 85+ ($z=10.4$, $P<.0000001$). Although the total number of in-hospital deaths rose slightly, the proportion of patients with TBI who died in the hospital dropped from 9.8%-8.4% ($z = -2.79$, $P=.005$). Significant decreases in hospital mortality were seen in both genders and all age groups. Routine discharges home fell from 61.0% to 55.1% ($z = -3.62$, $P=.0003$). All of this decrease was in older age groups. Total transfers to rehabilitation hospitals or nursing homes (grouped together in this study) rose 50% ($z=4.50$, $P=.00001$), with an 84% increase in those 65-84 and a 120% increase in the 85+ group. The percentage of patients with TBI transferred rose from 21.3% to 25.3% ($z=3.15$, $P=.002$). This increase occurred entirely in older age groups, with the proportion transferred in younger groups decreasing.

Conclusions: U.S. acute care hospital TBI discharges are increasing, while hospital death rates are declining. The proportion of routine discharges home is declining. Transfers to either rehabilitation hospitals or nursing homes are increasing in number and percentage. This increase is occurring entirely in older patients. Overall, these data suggest that the number and age of acute care patients with TBI transferred to rehabilitation hospitals is increas-

ing. Discharge patterns are changing in different ways in different age groups. Geriatric TBI rehabilitation is growing very rapidly.

Poster 90

Effect of Exercise on a Novel Clinical Test for Reaction Time.

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Disclosures: S. Reddy, none.

Objective: We have developed a reliable and valid clinical test of reaction time (RTclin) that is sensitive to the acute effects of concussion. If RTclin is to be used as a sideline concussion assessment tool, then the acute effects of exercise on RTclin may need to be controlled. The purpose of this study, therefore, is to determine the effect of exercise on RTclin.

Design: Repeated measures, observational study.

Setting: Athletic training facility at an NCAA Division I university.

Participants: 21 male and 14 female collegiate athletes were assigned to an exercise ($n=23$) and a control ($n=12$) group by using 2:1 block randomization.

Interventions: The exercise group completed a graded 4-stage exercise protocol on a stationary bicycle (100 W \times 5 min; 150 W \times 5 min; 200 W \times 5 min; sprint \times 2 minutes), whereas the control group was tested at identical time periods without exercising.

Main Outcome Measures: The mean RTclin was calculated over 8 trials as the fall time of a vertically suspended rigid shaft after its release by the examiner before being caught by the athlete; RTclin was measured at baseline and after each of the 4 stages.

Results: Although both heart rate and rate of perceived exertion increased over the 4 stages in the exercise group (which suggests adequate exertion), there were no significant group ($P=.422$) or stage ($P=.296$) effects on RTclin as assessed by repeated measures regression analysis. Mean RTclin in the exercise and control groups, respectively, were 211 ± 16 ms and 209 ± 13 ms (baseline); 207 ± 19 ms and 214 ± 17 ms (stage 1); 209 ± 21 ms and 21 ± 13 ms (stage 2); 210 ± 18 ms and 208 ± 15 ms (stage 3); 206 ± 18 ms and 206 ± 16 ms (stage 4).

Conclusions: Exercise did not appear to affect RTclin performance in this study, which suggests that RTclin measured during a sideline concussion assessment does not need to be adjusted to account for the acute effects of exercise.

Poster 91

Osmotic Demyelination Syndrome Due to Rapid Correction of Hyponatremia: A Case Report.

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Disclosures: B. Tonkin, none.

Patients or Programs: A 45-year-old man with new speech and strength deficits.

Program Description: Due to regular consumption of large amounts of free water, chronic hyponatremia was suspected. Due to an acute flu-like illness, the patient increased his water consumption above baseline. Evaluation for this illness revealed a serum sodium level of less than 105 mmol/L, which was corrected with hypertonic saline solution to 126 mmol/L over the next 24 hours. The illness resolved, and he was discharged to home. Approxi-