Abusive Head Trauma Epidemiology

Cercone et al. did not observe an increase in the number of patients with AHT during the pandemic but did see an increase in mortality, patients with retinal hemorrhages, and patients with abnormalities on cervical spine imaging. These data suggest a higher severity of AHT presenting to a pediatric tertiary care center during the pandemic [1)]

The incidence of Abusive Head Trauma is uncertain. This is a result of a lack of a centralized reporting system, signs of maltreatment not being present, unclear presentation, and acute head trauma not being a single isolated event but one that is part of chronic neglect and abuse that ends in severe morbidity and mortality [2) 3)].

In the first year of life, the incidence of abusive head trauma is estimated to be approximately 35 cases per 100,000 infants. The morbidity and mortality from abusive head trauma are significant. Approximately 65% have significant neurological disabilities, and 5% to 35% of infants die of injuries sustained. Most survivors have a cognitive and neurologic impairment.

Abusive head trauma is a subset of a much larger problem. Each year, millions of families of children are investigated by Child Protective Services for abuse and neglect. On average, over 3 million children per year are the subject of maltreatment reports. Of those, 20% are found to have confirmatory evidence of maltreatment.

Unfortunately, despite extensive research, there are no accurate statistics. Experts believe the incidence of pediatric abusive head trauma is about 1000 to 1500 infants per year. According to the Centers for Disease Control and Prevention (CDC), of the 2000 children who die from abuse annually, abusive head trauma accounts for approximately 10%. The victim of the shaken baby syndrome is typically between 3 and eight months. It is also reported in newborns and children up to 4 years of age. Up to 25% of all children diagnosed with the shaken baby syndrome die from their injuries [4) 5)].

A study estimates national incidence and case fatality rate of abusive head trauma (AHT), and evaluates differences by age, sex, race, and region, with a focus on children of 2-4 years.

Hospital discharges were extracted from The Healthcare Cost and Utilization Project's Kids' Inpatient Database from 2000, 2003, 2006, 2009, and 2012 using the CDC's narrow definition of AHT.

Survey-weighted chi-square tests were used to assess differences in incidence and case fatality rates.

The average annual incidence per 100,000 children was highest in <1 year-olds (27), followed by age 1 (4), age 2 (3), and age 3-4 (1). Average annual incidence varied significantly by sex ($p = 0.0001$), race ($p < 0.0001$), and region ($p = 0.0002$) within each age category. The average annual case fatality rate increased significantly with age, with a rate of 0.10 among children age <1 year, 0.15 for age 1, 0.23 for age 2, and 0.20 for age 3-4 years. The average annual case fatality rate was higher in the South (0.12) than West (0.10), Midwest (0.09), and Northeast (0.08) among children <1 year of age.

Black and Hispanic children and hospitals in the Midwest experienced higher incidence of AHT than

White children and Northeast hospitals, respectively, especially in cases <1 year of age. Case fatality rates increased significantly with age, and the South experienced the highest rates for infants <1 year [6].

References

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