Abusive head trauma prevention

Abusive head trauma is 100% preventable. A key aspect of prevention is increasing awareness of the potential dangers of shaking.

Finding ways to alleviate the parent or caregiver's stress at the critical moments when a baby is crying can significantly reduce the risk to a child. Some hospital-based programs have helped new parents identify and prevent shaking injuries and understand how to respond when infants cry.

All Babies Cry is a national program that promotes healthy parenting behavior through practical demonstrations of infant soothing and ways to manage the stress of parenting. The program is divided into four parts: 1. What's normal about crying? 2. Comforting your baby. 3. Self-care tips for parents. 4. Colic and how to cope.

The National Center on Shaken Baby Syndrome offers a prevention program, the Period of Purple Crying, which can help parents and other caregivers understand crying in healthy infants and how to handle it.

Another method that can help is the“five S's” approach, which stands for:

Shushing (by using “white noise” or rhythmic sounds that mimic the constant whir of noise in the womb. Vacuum cleaners, hair dryers, clothes dryers, a running tub, or a white noise machine can all create this effect.) Side/stomach positioning (placing the baby on the left side — to help with digestion — or on the belly while holding him or her. Babies should always be placed on their backs to sleep.) Sucking (letting the baby breastfeed or bottle-feed, or giving the baby a pacifier or finger to suck on). Swaddling (wrapping the baby in a blanket like a “burrrito” to help him or her feel more secure. Hips and knees should be slightly bent and turned out). Swinging gently (rocking in a chair, using an infant swing, or taking a car ride to help duplicate the constant motion the baby felt in the womb). If a baby in your care won't stop crying, you can also try the following:

Make sure the baby's basic needs are met (for example, he or she isn't hungry and doesn't need to be changed). Check for signs of illness, like fever or swollen gums. Rock or walk with the baby. Sing or talk to the baby. Offer the baby a pacifier or a noisy toy. Take the baby for a ride in a stroller or strapped into a child safety seat in the car. Hold the baby close against your body and breathe calmly and slowly. Give the baby a warm bath. Pat or rub the baby's back. Call a friend or relative for support or to take care of the baby while you take a break. If nothing else works, put the baby on his or her back in the crib, close the door, and check on the baby in 10 minutes. Call your doctor if nothing seems to be helping your infant, in case there is a medical reason for the fussiness. To prevent potential AHT, parents and caregivers of infants need to learn how to respond to their own stress. It's important to tell anyone caring for a baby to never shake him or her. Talk about the dangers of shaking and how it can be prevented [1)].

The objective of Barr et al., from the University of British Columbia, Vancouver, Canada, was to determine whether the British Columbia experience implementing a province-wide prevention program reduced Abusive head trauma (AHT) hospitalization rates. A 3-dose primary, universal education program (the Period of PURPLE Crying) was implemented through maternal and public health units and assessed by retrospective-prospective surveillance. With parents of all newborn infants born between January 2009 and December 2016 (n = 354,477), nurses discussed crying and

shaking while delivering a booklet and DVD during maternity admission (dose 1). Public health nurses reinforced Talking Points by telephone and/or home visits post-discharge (dose 2) and community education was instituted annually (dose 3). During admission, program delivery occurred for 90% of mothers. Fathers were present 74.4% of the time. By 2-4 months, 70.9% of mothers and 50.5% of fathers watched the DVD and/or read the booklet. AHT admissions decreased for <12-month-olds from 10.6 (95% CI: 8.3-13.5) to 7.1 (95% CI: 4.8-10.5) or, for <24-month-olds, from 6.7 (95% CI: 5.4-8.3) to 4.4 (95% CI: 3.1-6.2) cases per 100,000 person-years. Relative risk of admission was 0.67 (95% CI: 0.42-1.07, P = 0.090) and 0.65 (95% CI: 0.43-0.99, P = 0.048) respectively.

Barr et al., concluded that the intervention was associated with a 35% reduction in infant AHT admissions that was significant for <24-month-olds. The results are encouraging that, despite a low initial incidence and economic recession, reductions in AHT may be achievable with a system-wide implementation of a comprehensive parental education prevention program [2].

The number of cases with child abuse is increasing in Japan, and abusive head trauma (AHT) is a major cause of death in abused children. Child abuse has been recognized by the late 19th century, and widely accepted as battered child syndrome in the middle of the 20th century. As terms, there had been considerable mechanistic controversies between shaken-baby and -impact syndrome until the beginning of the 21st century. In recent years, AHT has been utilized as a less mechanistic term. Most of the characteristics of AHT in Japan have been similar to those in the United States as follows: infant is the most common victim, acute subdural hematoma (SDH) is the most common intracranial lesion, and retinal hemorrhage is often complicated. On the other hand, several characteristics have been different as follows: mother is the most common perpetrators, impact is a more common mechanism of trauma than shaking, and external trauma is more common reflecting the existence of impact. Since AHT as well as child abuse is a social pathological phenomenon influenced by victims, perpetrators, socioeconomic circumstances, and so on, various aspects of AHT as well as child abuse can be changed with times. Actually, a recent paper suggests such changes in infants with acute SDH due to AHT. In a review article, AHT, abusive infantile acute SDH in particular, are reviewed from the aspect of neurosurgical perspectives, including its mechanisms of trauma, biomechanics, clinical features, management, and prognosis, to update the trend in Japan [3].

The accuracy of the history obtained from the caregivers of infants may be low in severe infantile head trauma. Therefore, medical professionals should treat the mechanism of injury obtained from caregivers as secondary information and investigate for possible abusive head trauma (AHT) in cases with inconsistencies between the history that was taken and the severity of the injury observed [4].

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http://kidshealth.org/parent/medical/brain/shaken.html#
2)
Barr RG, Barr M, Rajabali F, Humphreys C, Pike I, Brant R, Hlady J, Colbourne M, Fujiwara T, Singhal A. Eight-year outcome of implementation of abusive head trauma prevention. Child Abuse Negl. 2018 Jul 31;84:106-114. doi: 10.1016/j.chiabu.2018.07.004. [Epub ahead of print] PubMed PMID: 30077049.
3)
Karibe H, Kameyama M, Hayashi T, Narisawa A, Tominaga T. Acute Subdural Hematoma in Infants with Abusive Head Trauma: A Literature Review. Neurol Med Chir (Tokyo). 2016 May 15;56(5):264-73. doi: 10.2176/nmc.ra.2015-0308. PubMed PMID: 26960448; PubMed Central PMCID: PMC4870181.
4)
Amagasa S, Matsui H, Tsuji S, Moriya T, Kinoshita K. Accuracy of the history of injury obtained from the caregiver in infantile head trauma. Am J Emerg Med. 2016 Sep;34(9):1863-7. doi: 10.1016/j.ajem.2016.06.085. PubMed PMID: 27422215.