

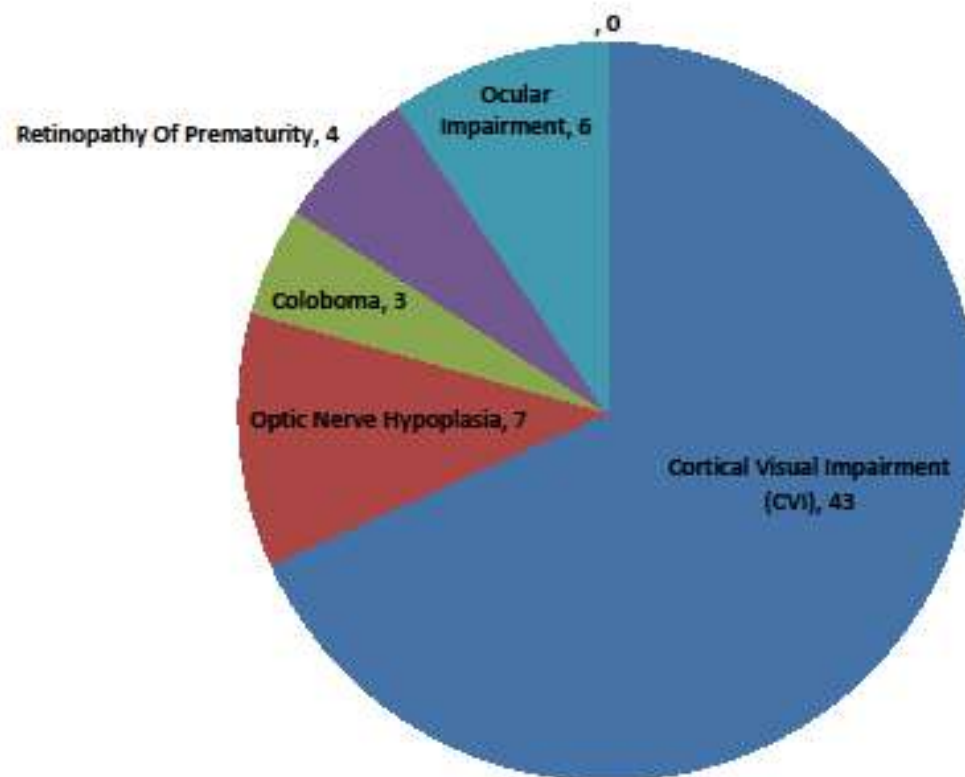
Issues related to children with SBS/AHT: a look at our children

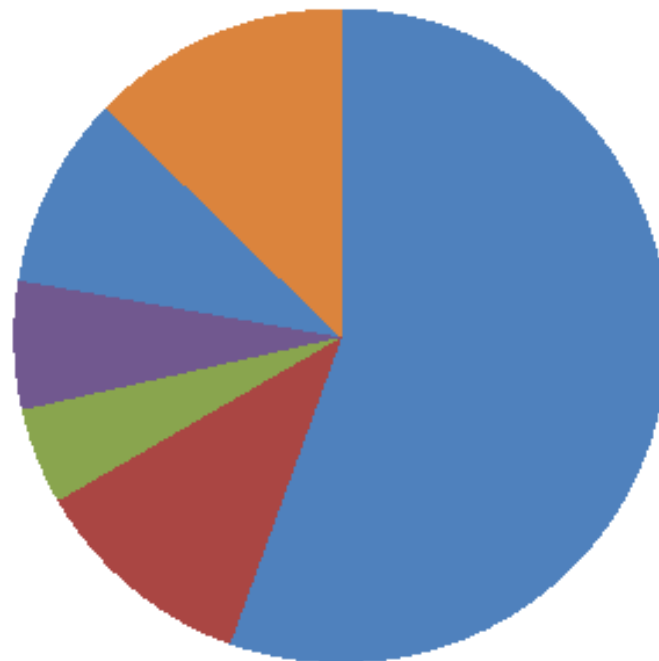


Diagnosis	Cortical Visual Impairment (CVI)	Optic Nerve Hypoplasia	Coloboma	Retinopathy Of Prematurity	Ocular Impairment
Number Of Students	43	7	3	4	6
% Of Students	68%	11%	5%	6%	10%

Total Number Of Students

63





■ Cortical Visual Impairment (CVI)

■ Optic Nerve Hypoplasia

■ Coloboma

■ Retinopathy Of Prematurity

■ Ocular Impairment

■ CVI Due To Non-Accidental Head Trauma

What is Shaken Baby Syndrome?

- Violent Whiplash Injury
 - Intracranial Bleeding
 - Unconsciousness
- Inflicted, not accidental
- Result of violently shaking a baby or child
- Causes severe disabilities or death due to brain injury

Ages of SBS Victims

- Few days old -----five years
- Average age of six to eight months

Other age related facts

- The younger the infant the greater the risk of injury (Blumenthal 2002,post graduate medical journal)
- SBS injuries possible in older children 2.5-7yr (Salehi-Had, Brandt, Rosas &Rogers Pediatrics 2006)

Age at time of injury

- 78% under the age of 1 year
 - one child 1 year old; one child 2.5 years
- Average age of those under 1 year 2.8 months
 - Range 1.5 mo -5 months

Gender

- 37% female
- 63% male

Clinical Signs of SBS*

- **Subdural Hematoma.** Accumulation of blood or blood clot beneath the dura. The dura is a fibrous membrane that surrounds the brain and attaches to the skull.
- **Retinal Hemorrhages.** Bleeding in the back of the eyeball.
- **Cerebral Edema.** Swelling of the brain. This causes pressure on various areas of the brain, some of which control breathing, heartbeat, etc.

More Clinical Signs of SBS

- **Diffuse Axonal Injury.** Shearing of nerve fibers in white matter of the brain that destroys brain tissue.
- **Skull Fracture.**
- **Subarachnoid Hemorrhage.** Bleeding under the arachnoid membrane, a membrane attached to the innermost layer of the tissues surrounding the brain. This causes pressure on and injury to the brain.

More Clinical Signs of SBS

- **“Black Brain”**. Wasting away of the brain due to lack of blood supply, seen on CT scan or MRI

SBS Triad of Injuries

- Retinal Hemorrhage
- Subdural Hematoma
- Cerebral Edema

The presence of this combination is characteristic of SBS. Other causes for this particular combination are remote.

More about Retinal hemorrhage (study by Kivlin, Simmons Lazoritz & Ruttum Ophthalmology 2000)

- Occurs in approximately 70-85% of SBS victims
- Critical for ophthalmologists to examine child if SBS is suspected. Non-opht missed retinal hemorrhage in 29% of affected babies
- Good initial visual reaction was highly correlated with good final vision and neurologic outcome

Injuries

- Retinal hemorrhages diagnosed in 50%
- Fractures detected in 68%
- Subdural/subarachnoid hemorrhage 100%
- Seizure activity reported in 100%
- LP/NLP 44% at time of injury
 - 3 months post injury reported no change in visual responsiveness

What Are the Effects of Shaking?

- Irreversible brain damage
- Visual Impairment
- Learning disabilities
- Mental retardation
- Seizures
- Death

(Effects continued)

- Some neurological effects of inflicted head trauma may not be apparent until child is 6 years old (Blumenthal 2002,post graduate medical journal)
- Orbital tissue and optic nerve sheath, optic nerve intradural hemorrhage more common in SBS than accidental pediatric head trauma due to unique SBS characteristics of acceleration-deceleration forces (Wyganski-Jaffe et al. 2006 American Journal of Ophthalmology)
- Long term visual impairment resulting from SBS is primarily due to brain injury to the vision centers and direct optic nerve injury (Levin 2006 Eye Findings in Shaken Baby Syndrome NCSBS)

- Mortality rate is higher for inflicted injury than accidental TBI (Blumenthal 2002,post graduate medical journal)
- Mortality rate reported for SBS ranges from 13% (Blumenthal,2002) to 25% (NCSBS) to 30% (Matschke et al. 2009 International Journal of Legal Medicine)

Presently

- All children are diagnosed with Cortical Visual Impairment
- 63% also show evidence of optic nerve atrophy
- 50% of the children continue to have seizure disorders
- 50% of the children are non-ambulatory and require full assistance in all activities of daily living
 - 3 of these children are considered medically fragile
- 25% of the children have a diagnosed hearing impairment

Normal crying curve

- Increase over the first 2 months
- Decreasing by 4-5 months

Incidence of SBS

- Same onset as normal crying curve
- Peak occurs around 12 weeks rather than 6 weeks
 - (this apparent delay in peak may be because 35-50% of diagnosed SBS have evidence of prior shaking or abuse suggesting that the shaking that brings them to the hospital is simply the last in a series of such incidents)
- Highest occurrence 3-8 months
- 78% of our children between 05 months with avg age of those 2.8 months

Crying as a trigger

- “The parallel provides convergent evidence of crying as a significant trigger to SBS”

(R.G. Barr)

- SBS is an extreme response to infant crying

Period of Purple Crying

- Peak crying
- Unpredictable
- Resistant to soothing
- Pain (Appears in)
- Longer bouts of crying 35-40 minutes avg during this time
- Evening or afternoon more likely

Functions of Crying

- Reflection of behavioral state
- More reactive than intentional at first
- Allows the infant to build a close bond to those who respond to their needs
- Evidence that it has a role in ensuring sufficient nutrition

(Barr, 2006)

- Only real means of communicating available to the infant in the early stages
- Decreases in crying coincide with important developmental milestones such as purposeful motor behavior and non-negative vocalizations

(Stifter, 2005)

Colic has been described

- as unexplained persistent crying in the first 3 months in an otherwise healthy infant.
- considered by some as a developmental phenomenon occurring in about 10% of the normal population
- It is a transient condition that ends around 3-4months
- (Stifter, 2005; Zeskind,2007)

Difficult temperament

- Frequent fussiness
- Difficulty being soothed
- Extending beyond four months
- Colic crying more intense and of longer duration whereas difficult temperament crying and fussing more frequent , but not necessarily more intense

(Zeifman, 2005)

90%-95% of the time there is no
evidence of organic disease to
explain the crying

(2006, Barr; 2005 Stifter)

“..Crying provides an ideal context for a parent and child to learn about each other and form an emotional bond.”

(Zeifman, 2005)

Potential impact of “excessive” crying/difficult infant

- Parents (mothers) may become less responsive
- May exhibit lower levels of positive maternal behavior
- Increased feelings of low self-efficacy
- Increased feelings of stress and greater separation anxiety
- More likely to consider their infants vulnerable
- (Stifter,2005)

Maternal Depression (PPD)

- Peak incidence of PPD coincides with the first three months of life.. (Normal crying peaks at around 2 months)
- Maternal depression may contribute to maternal failure to respond appropriately to their infant's signals
- Infants are very sensitive to emotional states of their mothers and other caregivers

(Oberlander, 2005)

- Crying may exacerbate the feeling of depression
- Crying may increase if not attended to

What we know about young children with disabilities

- 1993 study by The National Center on Child Abuse and Neglect found that children with disabilities are abused at approximately twice the rate of children without disabilities
- According to the American Academy of Pediatrics report “Maltreatment of Children with Disabilities”, children with disabilities accounted for at least 7.3% (63,650) of the abuse cases reported in 2004
- Among the characteristics of infants more likely to be abused is a child with special needs and disabilities (Wendel, Longmuir, Syed, 2009)

We know that children with severe disabilities especially those including visual impairment

- May not demonstrate eye contact ,gaze, and facial expressions characteristic of the child born without disabilities
- We know that these behaviors are key elements of the early connection between child and parent (Siegel-Causey, Ernst & Guess, 1987)
- We know that this may cause the caregiver of such children tremendous difficulty in establishing a communicative base (Fraiberg,1977)