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Sudden Infant Death Syndrome - risk factors and prevention

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Admission

SIDS- Sudden Infant Death Syndrome is a sudden, unexpected death of an infant during sleep, which cannot be justified by a medical history or post-mortem examination. This is undoubtedly one of the worst situations that young parents can encounter. Fear for child is enormous and often man tries to do everything to protect his offspring from danger, pain and illness. Unfortunately, SIDS concern healthy-growing infants, who are not suspected of any disease. The vast majority of cases occur in a baby cot, less often in the bed of parents, a pram or a car seat. It mainly concerns children up to 6 months old, but it also happens at a later age. The aim of this work is to discuss the risk factors and prevention of Sudden Infant Death Syndrome. [1,2,3]

SUDI, SIDS and ALTE

The risk of death in infancy is four times higher than in later childhood. In many children, it is caused by prematurity, or disease that has already been detected in pregnancy or after birth. Unexpected infant death is referred to as SUDI - Sudden Unexpected Death of Infant. In most cases, the cause of death of a child is determined in the sectional examination. If, however, despite the post-mortem examination, the cause remains unclear, then we refer to such death as SIDS – Sudden Infant Death Syndrome. Once, SIDS was also associated with symptoms currently classified as ALTE - Apparent Life-Threatening Events. This includes apnea, a change in the color of the dermis, impaired muscle tone and choking. It is believed that the symptoms of ALTE are caused by disorders of various organs (central nervous system, respiratory system, gastrointestinal tract). In the case of an infant's death, these episodes should not be referred to as SIDS. [1,2]

In the 1970s, it was hypothesized that SIDS is caused by apneas. Apneas are at least a 20 second pause in breathing (or shorter if they are accompanied by cyanosis, paleness or hypotonia). Currently, research shows, apnea cases have been shown to concern a different age group (newborns), and respiratory monitors proved to be effective in combating apneas, which, did not show efficacy while reducing the risk of SIDS. [1]

Epidemiology and risk factors of SIDS

The incidence of SIDS varies between countries and among different races. Most cases of SIDS occur in Australia and New Zealand and it is 6 per 1000 live births, while in Lombardy in northern Italy, this rate is 0.08 per 1000 live births. High risk of SIDS is found in North American Indians (about 3-6 / 1000 live births), while low among the yellow race (0.25-0.5 / 1000 live births), the white race has an average risk. The highest risk of SIDS affects children aged 2-4 months, with a peak at 12 weeks of age, and decreases with age. Pregnancy and low birth weight are considered infant risk factors (but 60% of cases are for children born at normal body weight), male gender (60% for boys) and children from multiple pregnancies. [1,2]

The main risk factors on the part of parents are:

• bad socio-economic situation

• low education

• a large number of maternal deliveries

• smoking cigarettes by a pregnant mother (1-9 cigarettes a day increases the risk twice, a cigarette pack daily increases the risk five times)

• mother's age <20 years
• smoking by parents and other people living with an infant

Risk factors for the child:
• Preterm delivery or after 41 weeks of pregnancy
• low birth weight <2500 g
• Apgar in 5 min <6 points
• perinatal infections
• male gender
• a child with multiple pregnancy
• SIDS in siblings
• congenital malformations
• sleeping in a stomach position, sleeping in one bed with other family members, sleeping in a separate room
• sleeping on a soft surface / cushion
• overheating / cooling of the child
• exclusive or predominant artificial feeding

Considering the known risk factors, in 2016 the American Academy of Pediatrics issued recommendations for preventive measures aimed at reducing the risk of the SIDS incident. [1,2,3,5,6,9,10]

Recommendations for pregnant women and after delivery

Avoid smoking cigarettes during pregnancy and after childbirth. It is important that not only the mother, but also other family members, and those in the vicinity of the child and the pregnant woman should give up smoking. It has also been proven that there is an increased risk of SIDS when a child sleeps in a bed with a smoker, even if the adult does not smoke in the presence of a child or in the bedroom.

Pregnant woman and planning pregnancy should avoid alcohol and drugs. The use of alcohol by parents of infants, especially in a bed-sharing situation is extremely risky.

It is recommended that teenagers do not get pregnant, and that the interval between consecutive pregnancies should be a minimum of one year. Systematic medical care over a pregnant woman and a healthy lifestyle during pregnancy are important. [1,3,5,9,10]

Sleep hygiene

It is recommended that the infant sleeps alone in the crib. It is not advisable to sleep with parents or in bed with siblings. Both of these situations pose the risk of crushing the child during sleep. A baby cot should be equipped with a relatively hard mattress covered with a fitted, stretched sheet. The soft mattress is not suitable for children up to 1 year old, they pose a risk of strangulation in the event of a baby being rolled up on the stomach. Apart from the mattress, there should be no other items in the crib. The child should sleep in a sleeping bag, it should not be covered with a blanket or quilt, nor should the pillows be used. In addition, protectors mounted on the rungs of the bed also pose a risk of strangulation, so you should not mount them, as well as place other items in the cot, such as plush toys [1,2,3,4,5,8, 10]

It is important to put the baby to sleep always in a position on the back, avoiding the position on the side, and the position on the stomach is considered extremely risky. The AAP recommendations emphasize that the position on the back is also recommended for children with gastro-intestinal reflux, it has not been proven that this position is associated with a greater risk of choking in the event of spilling, while reducing the risk of suffocation of the infant during sleep. [2,3,8,10]

Car seats, strollers, swings and other sitting devices are not a suitable place to sleep for babies. If the child falls asleep in this devices, the sleeping child should be moved as far as possible to the bed. If this is impossible, it should be controlled so that the clothing does not cover the face of the child which could interfere with breathing. Car seats protect infants in the event of a car accident and their role is undeniable. However, the child should stay in the seat only as long as it is absolutely necessary. Studies show that after 60 minutes of driving in a child's seat the oxygen saturation of the child falls below 94%. It is important that in the case of long car trips often take breaks and pull the child out of the car seat. [3,4,7,9,10]

Other recommendations

Breastfeeding is a protective factor against SIDS. It is considered that the minimum breastfeeding time, which reduces the risk of a sudden infant death syndrome by almost half, is 2 months. Longer breastfeeding results in further risk reduction. However, the advantage of exclusive breastfeeding over partial breastfeeding and the use of modified milk has not been proven. Therefore, women should be motivated to breastfeed their babies even when feeding is necessary. [3,6,9,10]

Another risk factor for SIDS is overheating. In a room where a child is sleeping, avoid too warm and dry air. The child should be dressed according to the ambient temperature, using the rule to

dress no more than 1 layer more than the adult would feel comfortable at a given temperature. Pay attention to signals that indicate overheating, such as sweating, body temperature. [1,3]
Consider using a pacifier while napping and sleeping your baby. The protective mechanism of the soother for SIDS incidents is not fully understood, however, this trend has been observed. You should not force a child to use the pacifier when they are asleep, if they are not willing to do so themselves. [3.10]
Immunizations reduce the risk of serious infectious diseases, which translates into a reduction in the risk of death of infants. The relationship between SIDS and preventive vaccination has not been proven, however, the positive effect of vaccinations on infant health speaks for recommendations for treatment in accordance with the approved vaccination calendar. [3]
There are many devices on the market that, according to the producers, are supposed to reduce the risk of SIDS. However, most of these devices have not been tested to reduce the risk of death in infants and the protective effect has not been proven. Unfortunately, they can reduce the guardian's vigilance and abandon the AAP recommendations. The effectiveness of home cardiorespiratory monitors has been proven only in the case of apnea, unfortunately it does not translate into suddent infants death syndrome. [3]

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