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NEONATAL JAUNDICE IN BABIES

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Abstract: Neonatal jaundice (hyperbilirubinemia) in newborns remains one of the most pressing issues in pediatrics today. This condition, which worries many parents, is in most cases a natural physiological process, but sometimes it requires serious medical attention.

Keywords: neonatal jaundice, bilirubin, phototherapy, hyperbilirubinemia, blue spectrum LED, bili-blanket, physiological adaptation, monitoring, noninvasive methods, lactation.

The cause of jaundice is that after a baby is born, fetal hemoglobin (red blood cells) begins to break down in his body. This process results in the formation of bilirubin in the blood. Since the baby's liver is not yet fully developed, it does not have time to process bilirubin quickly and remove it from the body. As a result, the skin and whites of the eyes become yellowish.

When to be concerned - jaundice is divided into physiological (normal) and pathological (dangerous) types. If the following signs are detected, you should immediately consult a doctor and check the bilirubin level: 1-time indicator: If jaundice appears on the first day of the baby's birth. 2-bilirubin level: If the bilirubin level in the blood exceeds $256 \mu\text{mol/l}$ (18 mg/dL). 3-duration: If the symptoms of jaundice last more than 14 days. 4-the condition of the child: If the baby is lethargic, does not want to suckle, or sleeps excessively.

Phototherapy: the miracle of light therapy - modern medicine has abandoned aggressive drugs and switched to the most effective and safest method - phototherapy. This method was accidentally discovered in England in the 1950s: nurses noticed that jaundice passed faster in babies in cribs exposed to sunlight.

How the process works - special blue-spectrum LED lamps (460–490 nm) convert bilirubin into a water-soluble isomer. This substance is easily excreted from the body through urine and feces, without the involvement of the liver.

Today, the following high-tech methods are used in hospitals: Bili-blanket - this device allows you to treat the baby without separating it from the mother. The baby continues to be irradiated even while breastfeeding; Intensive phototherapy - when the bilirubin level is very high, light is given both above and below the baby (using special photomattresses); LED systems - New generation lamps prevent the baby from overheating or dehydration.

Two important rules are followed during phototherapy:

1- Eye protection: The baby's eyes must be covered with a special tight bandage that protects them from light.

2- Frequent breastfeeding: Since bilirubin is mainly excreted in feces, frequent breastfeeding of the baby (at least 8-12 times a day) increases the effectiveness of the treatment.

Successful management of neonatal jaundice is not just about lowering bilirubin levels, but also about maintaining the baby's overall health and ensuring his or her physiological development. Modern pediatricians recommend the following three-pronged approach to this condition:

Preventing the effects of bilirubin on the nervous system - if bilirubin exceeds a certain level, it can cross the blood-brain barrier and cause damage to the central nervous system. Therefore,

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the concept of preventive vigilance should be central to the conclusion. Phototherapy is performed not only to whiten the skin, but also to protect brain cells.

Quality standard in phototherapy - the effectiveness of phototherapy today is directly related to the quality of the equipment used.

Wavelength: Blue light with a wavelength of 460–490 nm has the highest breaking capacity.

Intensity: The larger the surface area of the light (using a photomat and overhead lights), the faster the results.

Follow-up care: Maintaining fluid balance (through frequent breastfeeding) is an integral part of the treatment to prevent the child from becoming dehydrated during treatment.

Psychological peace of mind for parents - often jaundice in a newborn baby causes mothers to feel guilty or have strong fears. However, modern medicine has proven that physiological jaundice is an adaptation process of the body. Technologies such as the Bili-Blanket are designed to overcome this psychological barrier: the mother and child are not separated, which helps to improve lactation (milk supply) and the child recovers faster.

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