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Best possible start in life for premature babies

One in every ten infants worldwide is born early. A situation that is compounded by the fact the first few days of life are the most dangerous. As a result, neonatology has a critical role to play in paediatric care. From 17 to 20 October, the focus of discussions at the 10th Congress of the European Academy of Paediatric Societies (EAPS) will centre on the medical measures needed to improve survival rates for preterm infants, as well as how new treatment can prevent significant complications, and the closer integration of parents into intensive medical care in future.

"The first 1,000 days of a person's life are also the most critical, as the foundations for an individual's entire life are laid during pregnancy, birth, and the infant's development over the course of their first two years. This also has a bearing on risks when it comes to illnesses later in life. That is why all of us working in neonatology are striving to provide preterm infants with the best possible care to help them achieve a long and healthy life," explained Prof. Sven Matthias Wellmann, Chief Physician and Head of the Department of Neonatology at Barmherzige Brüder KUNO Klinik St. Hedwig in Regensburg and member of the European Society for Paediatric Research (ESPR) council.

One in ten children is born prematurely

According to the WHO, one in ten babies worldwide is born prematurely. While preterm infants in developing countries still have minimal survival chances due to the limited resources that are available, the prospects are brighter for those born at the threshold of viability in highly developed countries. "The threshold of viability is the term used to describe the point at which a newborn has a real chance of surviving outside the mother's body. Where we are, the survival chances from the 22nd week of pregnancy (22+0 to 22+6) are 50%, rising to 70-80% from 23 weeks, and to over 90% after 28 weeks. As this shows, not all preterm births are the same, as the maturity of the newborn and their chances of survival increase with each additional week of pregnancy," Wellmann noted.

Cortisone, breathing assistance, and surfactant – the trinity of preterm medicine

If there is a risk of a preterm birth before the 34th week of pregnancy, the first standardised measure is to administer injections to the mother to accelerate lung maturity, ideally starting two days before birth. "These injections contain cortisone, which gives the unborn child an important signal that it is time to start producing surfactant, a substance that regulates the expansion of lung alveoli, which helps the infant to breathe more effectively after birth. After birth, we support these preterm infants with a respiratory mask as an additional precaution," Wellmann explained. This aims to prevent the lungs from collapsing and ward off complications such as respiratory distress syndrome or brain haemorrhage. Also administered post-partum, the third crucial treatment often involves the early administration of artificial surfactant. "These three measures enable the survival of preterm infants from the

22nd/23rd week of pregnancy and help avoid complications from developing, while significantly increasing their chances of leading a normal life,” the neonatologist added.

Multidisciplinary care improves the chances of a healthy life

“Besides improving the overall chances of survival, our goal is to care for preterm infants so well that complications and any other severe health consequences related to extreme prematurity are prevented,” Wellmann confirmed. Extreme prematurity describes births that occur before the 28th week of pregnancy. The most common complications including bleeds on the brain and lungs, intestinal issues and serious infections, which occur in about 20-30% of such cases. “To provide the best possible care for preterm infants, a multidisciplinary team comprising doctors, nursing staff and parents is needed because it is only by working together as a team that we can achieve positive outcomes for the children,” Wellmann said.

Parents - the key to success

Improving outcomes is also predicated on bringing about a significant paradigm shift in the role played by parents. While parents were still seen as visitors in the intensive care unit 20 years ago, today they are considered an integral part of the preterm infant's care. “There is a psychological connection between the parents and child. Skin-to-skin contact, as facilitated by 'kangaroo care', has a significant neuroprotective effect. It calms the parents and newborn alike, leading to a decline in stress levels, which promotes the baby's overall development, and brain maturation in particular,” Wellmann confirmed. In kangaroo care, a method which was developed in Austria in the 1980s, the baby, wearing only a nappy (diaper), lies on the bare chest of the mother or father for several hours a day over a period spanning several weeks.

Hospital-at-home concepts – empowering parents

When it comes to preterm and chronically ill infants, a family-centred approach to care is crucial. “As a result, we are working on the development of clear concepts and structures that are designed to involve and train parents. This starts with kangaroo care for preterm infants and breastfeeding support. It also extends to psychological and physiotherapy support, ensuring the best possible continuation of treatment at home after the patient is discharged from hospital,” Wellmann said. With proper training, parents are able manage certain complications – such as mild respiratory issues, susceptibility to infections, and neurological problems – in their home environment. Early intervention by parents – and in training institutions – can also help mitigate mild neurological problems, allowing children to have the same long-term opportunities as others.

About IAKW-AG and the EAPS Congress

Internationales Amtssitz- und Konferenzzentrum Wien, Aktiengesellschaft (IAKW-AG) is responsible for maintaining the Vienna International Centre (VIC) and operating the Austria Center Vienna (ACV). The Austria Center Vienna is Austria's largest conference centre. With 21 halls, 134 meeting rooms and some 26,000m² of exhibition space, it is one of the top players on the international conference circuit. The 10th Congress of the European Academy of Paediatric Societies (EAPS) is organised by the European Academy of Paediatrics (EAP)

and the European Society for Paediatric Research (ESPR). It focuses on the latest advancements in paediatrics, including neonatology, genomics, metabolic diagnostics, protein research (multi-omics), and new forms of treatment.

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