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BRONCHOPULMONARY DYSPLASIA (BPD) IN AN EXTREMELY LOW BIRTH WEIGHT (ELBW) NEWBORN – CASE REPORT

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Bronchopulmonary dysplasia (BPD) or chronic pulmonary disease is a recognized complication of prematurity which impacts different organ systems, most significantly lung function and neurocognitive development. Classic BPD is defined as the need for supplementary oxygen at the age of 28 days or the need for 30% or more supplementary oxygen and/or positive pressure ventilation at the corrected age of 36 weeks in newborns born before 32 weeks gestation. There are many reported treatment modalities (systemic and inhaled corticosteroid therapy, inhaled nitric oxide, vitamin A, caffeine, diuretics and bronchodilators), however in all large meta-analyses reported to date none of the modalities showed a substantially better efficacy in comparison to the others.

We are presenting a case of a premature newborn born to a 40-year old mother. This was a second pregnancy, which was uncomplicated until the 23rd week of gestation when premature prelabour rupture of membranes occurred, after which the mother received dexamethasone prophylaxis. At 26 weeks and 6 days of gestation a male premature newborn was born by spontaneous vaginal delivery, Apgar scores were 4, 5 and 7 at 1, 5 and 10 minutes of life respectively, birth weight was 920 grams, body length 35 cm. After primary resuscitation and stabilization in the delivery room he was transferred to the NICU, positive pressure ventilation was commenced and he received surfactant. He was extubated on day 8 of life, however even after numerous attempts at treatment (including low dose systemic and inhaled corticosteroid therapy, aminophylline, caffeine) it was not possible to reduce the need for additional oxygen, which, in combination with typical chest X-ray changes, led to confirming the diagnosis of BPD. Additionally, he developed retinopathy or prematurity (ROP), which was treated by intravitreal application of anti-VEGF with very good response. On 2D brain ultrasound a grade 2 intraventricular hemorrhage (IVH) was seen, that remained stable during follow up and the MRI at 40 weeks corrected gestational age was normal. At 3 months of age, considering persisting need for supplementary oxygen, therapy with oral theophylline and inhaled fluticasone was commenced, after which the need for supplementary oxygen reduced to 0.1-0.2 L/min and the lung auscultatory findings were improved at discharge. Outpatient follow-up was continued – including pulmonologist, neuropsychiatrician, rehabilitation specialist, speech therapist. At 9 months of age (6 months corrected age) the infant doesn't require supplementary oxygen and has satisfactory weight gain. Further multidisciplinary follow-up of growth and development is essential, as well as lung function monitoring, which will determine management of therapy with theophylline and fluticasone.

Although there is no specific diagnostic test or therapy for children with BPD, careful selection of therapeutic modalities as well as methodical medication adjustment can significantly contribute to prevention, elimination or significant reduction of symptoms in children with BPD.

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NEONATAL LISTERIOSIS – A CASE REPORT

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Neonatal listeriosis is a rare but severe infectious disease caused by the gram-positive bacterium *Listeria monocytogenes* with a mortality rate of almost 30%. Pregnant women are mostly infected with *Listeria* by consuming contaminated food but cases of listeriosis after direct contact with an infected animal have been reported. Neonatal listeriosis has two clinical presentations, early and late-onset. Early onset listeriosis is caused by transplacental transmission or ascending infection with consequent chorioamnionitis, premature rupture of membranes, meconium amniotic fluid and neonatal sepsis, often with the presence of numerous granulomas mostly in spleen and liver of the infant. Late onset listeriosis is caused by an infection transmitted to the newborn when it passes through the birth canal or is, less likely, a nasocomial infection. Late onset listeriosis is manifested as meningoencephalitis between the 1st and 2nd week of life and is associated with a better prognosis.

We report a case of a male newborn born in the 38th week of gestation from a febrile mother, born in meconium amniotic fluid, which was admitted to the neonate intensive care unit in the first hours of life due to development of respiratory distress syndrome and signs of early neonatal sepsis. After obtaining microbiological samples, empirical therapy with ampicillin and gentamicin was introduced. *Listeria monocytogenes* was isolated from skin swabs and gastric aspirate of the newborn, blood culture as well as urine and cerebrospinal fluid culture came sterile; cerebrospinal fluid PCR was also negative for *Listeria* DNA. We did not radiologically verify presence of granulomas in any organ. Following this result, cervical and vaginal swabs were obtained from the mother and also revealed presence of *L. monocytogenes*. In the further course, the doses of antibiotics were adjusted and the newborn was afebrile, control microbiological samples were sterile and he was discharged after 16 days. Reviewing medical records, it was noticed that the 1st child of this mother also had a perinatal infection where the causative agent was not isolated, and given the anamnestic data that the family is engaged in sheep breeding, it is possible that the background was also unrecognized *L. monocytogenes* infection. In conclusion, a blood culture sample and cervical swab should be done to any pregnant woman with an unclear febrile condition, as *Listeria monocytogenes* is a common unrecognized cause of miscarriages and stillbirths, and early treatment is necessary to prevent vertical transmission and thus severe complications and fatalities in newborns.

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PERSONALIZED GROWTH TRAJECTORIES – A BEDSIDE TOOL FOR MONITORING GROWTH OF PRETERM INFANTS

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Fenton growth charts are commonly used to monitor postnatal growth of preterm infants. New individualized growth chart