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**Scientific
Tracks**



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The role of magnesium sulfate in the treatment of persistent **pulmonary hypertension** in the **neonate**: our experience in King Hussein Medical Centre (KHMC).

Persistent pulmonary hypertension in neonates (PPHN) is a critical condition caused by a failure in normal cardiac-pulmonary adjustment after birth; many factors can interfere with this process, such as meconium aspiration, Parenchyma lung disease, sepsis, intrauterine and/or **prenatal hypoxia**, and abnormal pulmonary development.

Objectives:

The treatment of persistent acute pulmonary hypertension of newborn remains controversial and has been tried in various treatment modalities. This study was conducted to evaluate the effect of magnesium sulfate (MgSO₄) as a treatment for persistent pulmonary hypertension of the newborn (PPHN) and its outcome

Methods:

This study is a retrospective review of a neonate with PPHN treated with magnesium sulfate (MgSO₄) at King Hussein Medical Centre (KHMC) **neonatal intensive care units** during the period of January to December of 2018. Nineteen newborn babies admitted to the neonatal intensive care units (NICU), with respiratory failure and profound **hypoxemia** resulting from persistent pulmonary hypertension, were enrolled in the study. All patients underwent the following tests: full blood count, kidney function test, arterial blood gas, **blood culture**, chest x-ray, and echocardiograms.

All patients with congenital heart disease excluded from this study. Statistics and data described in terms of median, mean \pm standard deviation (\pm SD) frequencies and percentages. Statistical calculations were carried out using Microsoft Excel 2010 computer programs and the Statistical Package for the **Social Sciences** (SPSS) version 18.

Results:

The total number of 19 cases of PPHN from 10155 deliveries, by year, admitted to neonatal units at KHMC during 2018. Male newborns with PPHN were 10 (52.6%), while the **female newborns** were 9 (47.4%). The number of newborns with lung hypoplasia was 4 (21.1%), prematurity was 7 (36.8%), respiratory distress syndrome (RDS) was 12 (63.2%), sepsis was 9 (47.4%), congenital diaphragmatic hernia was 2 (10.5%), birth asphyxia was 2 (10.5%). Sildenafil used in 4 (23.53%) cases treated with magnesium sulfate. The number of deaths was 7 (36.8%).

Conclusion:

This study provides evidence that magnesium sulfate can play a part in the therapy of PPHN. It is a non-aggressive treatment of short-duration and low cost.

Biography:

Alaeddin Ali Saleh currently working as a professor in **King Hussein Medical Centre**, Jordan. He published many articles on neonatal & neonatal care and his research interests are **pulmonary hypertension** in neonate, **neonatal care** and pediatrics.

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A Model for analyzing the results of Surfactant administration in neonatal wards

Surfactant has been increasingly popular for treatment of diverse neonatal pulmonary diseases including respiratory distress syndrome; many questions are still unsolved regarding its efficacy, short term and long term side effects though. This researched was aimed to investigate all neonates treated by Surfactant in Khanevadeh hospital from 2011 to 2014 and follow them up to 6 months of age on a historical cohort model. 72 neonates got the fitting criteria with a mean [gestational age](#), birth weight and admission duration of 21.53, 33.5 and 15.4 respectively. 56.9% were treated by Survanta and Curosurf was prescribed for others. Death rate calculates to be 29.1% and 20.8% patients suffered from [pneumothorax](#) as a major [side effect](#). Curosurf acted worse as it caused significantly longer admission and ventilation duration and higher pneumothorax probability. Incidence of lower respiratory tract infections under 6 months of age is measured 15.8% which is significantly more than total population. Regarding to this research, general outcome of this treatment module in Khanevadeh hospital is equal to national statistics and still not in the order of international ones. Survanta showed better outcomes comparing to Curosurf. Risk of lower respiratory tract infections under 6 months of age was higher after treating surfactants eventually

Biography:

Banafshe Dormanesh has completed her medicine in 1993, completed her [pediatric](#) specialty in 1997 and [Pediatric Nephrology](#) subspecialty in 2002 from the Tehran University of [Medical Sciences](#). She is Professor in pediatric nephrology and is the Head of Pediatric Department in Faculty of Medicine

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Peers supporting peers: **Preterm mothers post discharge WhatsApp Support group experience**

Preterm births are unanticipated demanding experience for families. Despite integration of mothers into their preemie care during admission and discharge criteria satisfied; replication of NICU staffs support at home is a crave by mothers. Post discharge mothers' challenges include concern for their babies' general wellbeing. These concerns result in lower breastfeeding rates, poor maternal-child bonding and poor mothers' mental health.

Preterms' mothers are ready to share, get information pertaining care of their babies. Recently,

preemies' mothers' support groups, blogs are on social media:

Facebook, Twitter, YouTube, Pinterest and Instagram however most don't have personal touch. Only preterms' mothers comprehend the stress of caring for preemies

The purpose of study is to access benefits of 'post discharge' Peers supporting Peers' WhatsApp group of preemies' mothers with supervision of **NICU** Doctors and nurses

Methodology:

WhatsApp group was created 02/07/2020 for preemies' mothers with smart phones. They are added post discharge of their babies; NICU staffs added for supervision. Ground rules set and Purpose explained:

1) mothers supporting one another by sharing challenges, experiences. 2) Ask questions, other mothers answer, when no answer from peers; NICU staffs answer. 3) Share videos/pictures of babies' first birthday.

Questionnaire using google form and link sent to group for mothers to fill after 17 months

Findings: 48 mothers added over 17 months, 23 filled the online questionnaire

Mothers mean age was 33.6 years. 91.3% and 8.6% had university/polytechnic and secondary school education respectively. 45% had preterms before and didn't have post discharge support except post discharge hospital follow-up visit

All mothers found: 1) questions asked or answered by peers or **NICU** staffs helpful, in reduction, of hospital visits. 2) First birthday's videos post motivating

They are ready to keep group to encourage other mothers.


Conclusion:

Support groups seems more effective when peers share their experience with one another.

Biography:

Osaretin Chimah has her passion in **neonatal care** especially for preterm babies. Her passion causes her to go miles to seek ways to improve their survivals despite some **environmental limitations**. She is passionate about quality improvement in workplace. Can it be better is always her slogan.

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Comparison NAVA mode ventilation vs PSV & CPAP mode of ventilation

Neurally Adjusted Ventilatory Assist (NAVA) is newest mode of artificial ventilation. The potential of NAVA to adjust ventilatory baby's efforts and to reduce Ventilator Induced Diaphragm Dysfunction. This action is based on the continuous coupling between the patient's neural output and ventilator assistance. In contrast to Pressure Support ventilation, where a gradual increase in the assist level will abolish the electrical activity of the **diaphragm**, an increase in the NAVA level will unload the muscle, but still maintain muscle activity. Hence, over-assist by Pressure Support will function as a semi-controlled mode where the patient may be triggering the ventilator, by a small activation of the **intercostal muscles** resulting in a large tidal volume delivery. In contrast, NAVA will maintain the same tidal volume and physiologic diaphragm activation with the degree depending on the NAVA level set.

The standard modes include PSV and CPAP modes

Comparison of NAVA mode with standard respiratory support in children with neonatal RDS

* Describe clinical characteristics, respiratory parameters and subjective signs of comfort during treatment in patients in the described two groups of ventilation in the neonatology department of the second Sheinovo Hospital- Sofia.

* This is a prospective study of cases in the two groups described

INCLUDING CRITERIA:

Ventilated patients in these two groups, with a subject of detailed pathology and available to breath spontaneously. The cases till now 22 cases were processed in two of groups. Exceptions is ventilated patients with asphyxia, aspiration syndrome and neurological signs

o NAVA invasive mode * PSV

o NAVA non-invasive ventilation * CPAP

REPORT ON THE QUALITY OF SYNCHRONIZATION AND COMFORT

Synchronization with the apparatus- with the following signs hours of calmness and sleeping / without alarm on the monitor system/,the presence of tachypnea. We use the Index asynchronization - The asynchronous index (AI). It is calculated as the number of cycles with a visible desynchronization /auto - triggering, insufficient spontaneous breathing, double triggering, short breathing cycle/ divided by the number of synchronized cycles, calculated at the rates per unit time according to the index of respiratory effort, calculated as the ratio of the EAdi / TIn for each respiratory cycle during the observed 15-minute period the number of cases of reintubation or changing of mode of ventilation

Conclusion:

Registration of the advantages of the invasive Nava mode at low gestational age and spontaneous respiration of more than 20%, exceptionally good effect on post-extubating patients in both modes of non-invasive ventilation, a clear advantage of full-term patients with extra alveolar gas collections from the non-invasive Nava mode during recovery.

Biography:

Donka Uzunova has her expertise in evaluation and passion in improving the **health** and wellbeing to the premature newborns and ill newborns. She is the head of The Department of Neonatology. Her activity is for evaluation and support of mechanical ventilation strategies **noninvasive** and gentles modes for **new-born babies**. Her experience for **NAVA** ventilation is just on the start point with the tendency for developing and improving ventilatory support technics

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Does fever increase or decrease blood circulation

This is the first time many people have heard such a question. When it comes to treating back pain, neck pain, and knee pain, it is often heard that the cause of the pain is reduced blood flow. A variety of heat-inducing devices are used to increase blood flow to the lower back, neck, and knee pains. Physiotherapy often provides more heat than fever. To this day, no one has heard that fever is caused by poor **blood flow**. As the disease progresses, blood flow decreases. Body tingling, body aches, and narrowing of the blood vessels under the skin are the signs, symptoms, and signals of decreased blood flow. Signs, symptoms, and signals of decreased blood flow show before the onset of fever. When the disease becomes a threat to life or organs blood circulation decreases, Temperature of fever will emerge to increase prevailing blood circulation. It is a well-known fact that as the disease progresses, blood flow decreases and this can lead to death. When there is a decrease in blood flow and its signs, symptoms, and signals, the immune system do actions to increase blood flow to save lives. It has been proven around the world that all types of heat increase blood flow. The heat of the fever increases the blood flow. Fever increases blood flow, which means more lymphocytes flow through **lymphoid tissues**. If the heat of the fever increases the blood flow, reducing the heat reduces the blood flow. It will increase inflammation and infection and finally, death will occur. According to physics, it is foolish that when fever temperature is reduced, shows the symptoms, signs, and signals of reduced blood flow, are ignored and then treated to reduce the heat again. The fever is heat energy. To date, modern science has not studied what actions were carried out heat on **fever**.

K. M. Yacob
Marma Health Centre, India

What kind of treatment should be given if you have symptoms of decreased blood flow?

Treatment should be to increase blood flow.

This is the basic principle of physics.

Is there any benefit in reducing body heat during fever?

There is no merit of any kind.

Not only is it of no benefit, but it also causes death by inflammation and infection.

The actual treatment for fever is to increase **blood circulation**. Two ways to increase blood circulation. 1. Never allow body temperature to lose

2. Apply heat from outside to the body. When the temperature produced by the body due to fever and heat which we applied to the body combines together, the blood circulation increases.

Heat-reducing fever treatment with water and paracetamol should be banned as soon as possible.

Biography:

K. M. Yacob is practicing physician in the field of **healthcare** in the state of Kerala in India for the last 32 years and very much interested in basic research. Yacob interest is spread across the fever, **inflammation** and **back pain**. Yacob is a writer and he already printed and published nine books on these subjects. he wrote hundreds of articles in various magazines. After scientific studies, he has developed 8000 affirmative cross-checking questions. It can explain all queries related to fever.

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Neonatal seizures associated with different pathologic KCNQ2 mutations

Statement of the Problem:

KCNQ2 mutations have been found in patients with familial benign neonatal seizures, myokymia or early onset epileptic encephalopathy. The diagnosis of neonatal seizures could be difficult and challenging in some cases. KCNQ2 encodes the potassium channel subunit Kv7.2 and its mutations have been shown to cause benign familial neonatal seizures (BFNS) with a favourable prognosis but are also associated with neonatal onset seizures and poor outcomes, such as early onset epileptic encephalopathy (EOEE).

Patients: We present a summary of our experience with neonatal seizures associated with KCNQ2 mutations. In all cases a full diagnostic evaluation including MRI was performed before the DNA analysis. The first patient has a positive family history, early onset tonic neonatal seizures, clinical signs of encephalopathy. The following mutation was identified: c638G>A, p.Arg213Gln, exon 4, KCNQ2, seizure free on carbamazepine treatment. The second patient presented with early tonic seizures, tonic eye deviations, burst-suppression EEG pattern, MRI –hypoplasia of corpus callosum, clinical evidence of severe encephalopathy, KCNQ2 mutation associated with EIEE was identified: G18416>A, p.Gly281Arg, exon 6. The third clinical case is a term baby presented with early seizures –generalized tonic and facial myoclonic, KCNQ2 mutation c.637C>TpArg213T, exon 4, successful treatment with carbamazepine, but severe developmental delay. Our fourth patient was with a positive family history, early tonic and clonic seizures, no evidence of encephalopathy, KCNQ2 mutation – partial deletion of exon 17, known as a cause of benign familial neonatal seizures. This infant is seizure free and the neurodevelopment is completely normal.


Conclusion:

KCNQ2 mutations could be associated with variable clinical presentation, the genetic testing should be performed in all neonates with unknown seizure cause after complete diagnostic evaluation.

Biography:

Ralitza Gueorgieva has her expertise as neonatologist in NICU, University Pediatric Hospital in Sofia. The main scientific interests are focused on the fields of neonatal intensive care and neonatal neurology. The team of the department has a great experience managing neonates born with perinatal asphyxia and hypoxic-ischemic encephalopathy, premature infants with different perinatal brain lesions. Another important issue in our clinical and scientific work is the treatment and follow up of infants with neonatal seizures.

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