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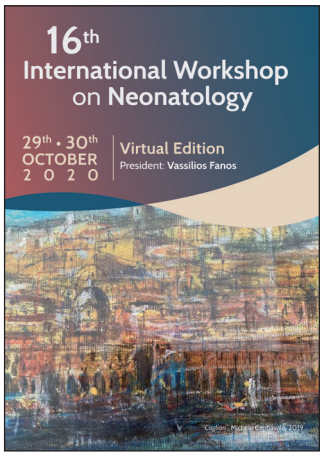

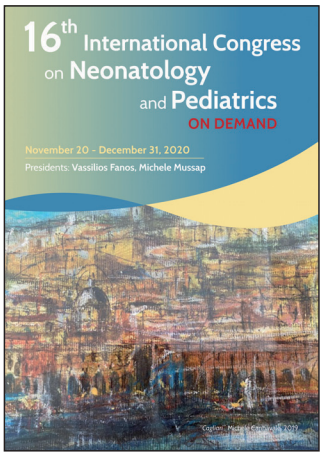

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ABS 1

ACRAL ERYTHEMA AND SWELLING IN A NEWBORN: A RARE PRESENTATION OF COW'S MILK PROTEIN ALLERGY

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INTRODUCTION

Cow's milk protein allergy (CMPA) is an abnormal immunological response to cow's milk proteins. It's one of the most common food allergies in children, but rarely occurs in neonates. The onset before one month of life is rare due to the time required for the development of sensibilization process and few cases of neonatal CMPA are described in the literature. CMPAs have nonspecific clinical signs and symptoms since the clinical presentation in the neonatal period and can be confused with infections or gastrointestinal disorders. Therefore, an early identification may be very challenging for neonatologists.

CASE REPORT

We present a 14-day-old male newborn with acute erythema and swelling of hands and feet and two episodes of regurgitation. He was born at full-term by vaginal delivery after an uneventful pregnancy. Birth weight was 3,548 g. On the 10th day of life, cow's milk-based formula was supplemented for the first time because of low maternal milk supply. He had a sister diagnosed with CMPA. The baby's weight was 3,530 g, he had not regained his birth weight yet. Laboratory tests revealed no signs of infections: normal leukocyte count (9.80 × 1,000/mmc with 45.4% neutrophils), C-reactive protein (CRP) was 22.7 mg/l and procalcitonin (PCT) was 0.48 ng/ml. Skin prick test (SPT) result positive (wheal size ≥ 3 mm). CMPA was confirmed by elevated total IgE (1,792 U/ml) and cow's milk protein-specific IgE (milk 0.33 KU/L, alpha-lactalbumin < 0.10 KU/L, β-lactoglobulin 17.5 KU/L, casein < 0.10 KU/L). He received an extensively hydrolyzed formula with a rapid regression of symptoms and was discharged home.

DISCUSSION

CMPA is a serious illness with potentially life-threatening consequences. It is frequently suspected in children, but no symptoms are pathognomonic. By a pathophysiological point of view, CMPAs are divided into two types depending on immune system reactions: IgE or non-IgE mediated allergy. CMPA affects up to 6% of children, with the highest prevalence during the first year of age, and a positive atopic familiar history is generally common. The diagnosis of CMPA is based on a detailed history of symptoms, careful clinical examination, SPT and serum specific IgE to cow's milk protein, elimination diet and oral food challenge. The first line treatment should be extensively hydrolyzed formula, while the use of amino acid-based formula is reserved when symptoms do not improve or in severe cases such as anaphylaxis, enteropathy, eosinophilic esophagitis and enterocolitis. The natural history of the disease is generally favorable with about 50% of children achieving tolerance within the first year of age and 80-90% within their fifth year. Our case represents a rare manifestation of CMPA in neonatal age. To the best of our knowledge, only another case with same symptoms has been described in literature to date. This report may improve our knowledge of CMPA, especially in its early detection and treatment to prevent complications.

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ABS 2

ANALYSIS OF THE ORGANIZATIONAL CLIMATE AND JOB SATISFACTION OF THE NURSING TEAM IN PEDIATRICS

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INTRODUCTION

The quality of care provided in pediatrics is closely related to the professionals' work quality and influenced by relationships, conflicts and in general by the social and human aspects lived in teams and in the organization [1]. Organizational climate can affect healthcare workers' performance, their job satisfaction and team effectiveness [2]. The aim of the study is to analyze perceived organizational climate and job satisfaction levels among nurses working in both pediatric wards and services.

MATERIALS AND METHODS

In December 2019, a descriptive study was conducted in a pediatric department in Italy, through the administration of a questionnaire to nurses, pediatric nurses, puericultures and social health workers. Validated scales (with Likert scale ranging from 1 = agree to 5 = disagree) were used to measure job satisfaction and organizational climate.

RESULTS

136 questionnaires of 204 administered (66.7%) were analyzed. The professionals were 87% female and 64% were over 50 years of age. 58% were nurses, 20% were social health workers, 16% were pediatric nurses and 6% were coordinator nurses. 62% of the professionals worked in healthcare for over 20 years and 31% of them had always worked in pediatrics. Professionals were on average highly satisfied with their work. Specifically, they were very satisfied with working relationship with their colleagues (M = 3.81) (the dialogue with them, exchanged advices, the opportunity to consult each other, and their consideration). They referred to be quite satisfied with the work content (M = 3.54) (the level of job autonomy, the sense of professional achievement, the results of their work, their role and responsibilities). Regarding general organizational climate, participants referred high level of satisfaction (M = 3.77). In addition, respondents agreed that available training opportunities were adequate (M = 3.16) to developing personal skills and improving professional competencies.

CONCLUSION

The study shows that respondents are overall satisfied with their work and perceive a positive organizational climate. As motivated professionals with positive feelings towards the organization are more likely to provide excellent care, it would be interesting launching a customer satisfaction survey involving children and their parents to assess their perceived level of nursing care.

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ABS 3

LABORATORY MEDICINE IN THE ERA OF COVID-19 PANDEMIC: A CHALLENGE FOR CHILDREN AND PEDIATRICIANS

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In the era of COronaVIrus Disease 2019 (COVID-19) pandemic, clinicians, intensivists, epidemiologists, scientists, and even policy makers asked dozens of questions, such as how does disease progression evolve, which factors contribute to the patient adverse outcome, how many people have been infected, how long does natural immunity last, and many others. Most questions can be addressed by laboratory medicine, the hidden science that saves the life. Since the onset of the pandemic, it was clear the importance to develop diagnostic tests to screening the presence of Severe Acute Respiratory Syndrome CoronaVirus 2 (SARS-CoV-2), the presence of specific viral antigens, and the presence of specific antibodies anti-SARS-CoV-2 in the human body fluids (nasopharyngeal secretion, blood, saliva). At once, diagnostic companies flooded the market with commercially available diagnostic tests, based either on conventional laboratory methods or rapid near patient testing; consequently, the clinical laboratories were drastically devasted by the urgent need to perform thousands of diagnostic tests. Any strategic decision was primarily based on the result of diagnostic

tests and, currently, the accurate tracing of the pandemic worldwide depends on clinical laboratory data. The presence of SARS-CoV-2 in humans is evaluated on nasopharyngeal specimens; however, the reopening of schools and the need to obtain fast reliable results on a large number of individuals promoted the development of rapid tests performed on saliva. Symptomatic and asymptomatic subjects previously infected by SARS-CoV-2 are identified by serology, namely the research of their antibodies anti-SARS-CoV-2. Again, the market was early overwhelmed by serologic tests and the identification of specific immunoglobulins (Ig) G, IgM, and even IgA, became an available routine test for clinical laboratories, with very short turn around time (TAT) due to their automation on analytical platforms. Despite this effort, serologic tests need further optimization in order to avoid false-positive and false-negative results. Since no currently available test allows the accurate measurement of these immunoglobulins, their quantitation remains a challenge. The role of laboratory medicine is also crucial for the management of symptomatic patients developing COVID-19. Several biomarkers can be used to monitoring the progression of the disease, the effectiveness of the therapeutic treatment, and the presence of multiorgan injury due to COVID-19 complications. A recent metanalysis performed on 21 studies found that 18 included lymphocyte count, 17 white blood cells (WBC) count, 14 platelet count, 12 neutrophil count, lactic dehydrogenase (LDH), alanine aminotransferase (ALT), and creatinine, 11 C-reactive protein (CRP), aspartate aminotransferase (AST), and D-dimer, 10 procalcitonin, 9 prothrombin time and hemoglobin. Authors concluded that the severity of COVID-19 was marked by a significant increase in D-dimer, WBC count, CRP, AST, and LDH; lymphopenia, thrombocytopenia, and decreased hemoglobin were also associated with severe disease. If the D-dimer is abnormally high at the hospital admission, it is likely the development of severe disease and the admission to the intensive care unit (ICU).

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ABS 4

RESPIRATORY MANAGEMENT OF TRANSFERRED CRITICAL NEWBORNS: HAS IT CHANGED OVER TIME?

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INTRODUCTION

Despite the implementation of a regional perinatal network that allows identification of high-risk pregnancies that will be centralized at level III hospitals, about 1% of neonates needs postnatal transfer. Respiratory diseases represent the most important reason for activation of Neonatal Emergency Transport Service (NETS). Different types of respiratory support can be used during the transfer: Non-Invasive Ventilation (NIV), as heated and humidified High-Flow Nasal Cannula (HFNC), Continuous Positive Airway Pressure (CPAP), Nasal Intermittent Positive Pressure Ventilation (NIPPV) or Mechanical Ventilation (MV), as Conventional Mechanical Ventilation (CMV) or High-Frequency Ventilation (HFV) [1]. The use of NIV was considered safe during transport, as only 0.1% of patients required intubation from CPAP and only 1% necessitated an escalation in the ventilation mode from HFNC to CPAP [2].

AIM OF THE STUDY

The aim of the present study was to evaluate the trend over time of respiratory management of critical newborns during transport.

MATERIALS AND METHODS

Observational, retrospective study of 3,238 infants transferred by Padua NETS from August 2000 to June 2019. All data were collected from NETS records, that are divided in 3 sections: before, during and at the end of transport.

RESULTS

The use of CPAP increased in 2000-2019 (APC = 12.94, $p < 0.0001$); the number of patients ventilated with Ambu bag decreased in 2000-2019 (APC = -13.11, $p = 0.005$); the adoption of NIV increased in 2000-2019 (APC = 32.86, $p < 0.0001$); Oxygen-therapy showed a reduction in 2011-2019 (APC = -16.74, $p = 0.0002$); the proportion of newborns in spontaneous breathing in ambient air remained unchanged in 2000-2006 (APC = 0.00, $p = 0.99$); the use of MV did not change significantly in 2000-2019 (APC = -1.27, $p = 0.08$).

DISCUSSION

As expected, according to guidelines encouraging less invasive approaches, the adoption of CPAP during transport considerably increases over time, becoming up to 36% of the chosen respiratory support. The percentage (about 40%) of transferred patients treated with MV remained stable over time, showing that transport team opted for a "safe" approach during the transfer of these high-risk neonates and confirming that a relevant proportion of patients in need of postnatal transfer suffer from a moderate-severe respiratory disease.

CONCLUSION

Respiratory support during transport is in constant evolution over time, and it includes different approaches [3]. Over the years, there was an increasing use of non-invasive respiratory support instead of oxygen therapy. A consistent proportion of neonates needed MV suggesting the presence of a severe respiratory disease. In the near future, we expect that the percentage of transported infants ventilated with NIV will further increase, thanks to the improvements in antenatal care and to the strengthening of regional NETS.

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ABS 5

EFFECTS OF THE INTRODUCTION OF A STANDARD PROTOCOL FOR THE EVALUATION OF FEEDING INTOLERANCE IN PRETERM INFANTS

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BACKGROUND AND AIMS

Feeding intolerance (FI) is one of the hardest challenges for neonatologists. A standard protocol to evaluate FI and guide clinical decision making is still lacking, resulting in uneven management. A novel protocol for the evaluation of FI in preterm infants was realized in our Neonatal Intensive Care Unit (NICU). Aim of this study is to evaluate the effects of the application of a standardized protocol on the time to reach Full Enteral Feeding (FEF).

METHODS

A novel protocol for the evaluation of FI was realized reviewing available literature. All preterm infants with a gestational age ≥ 25 week and < 30 week, on non-invasive ventilation support within 5 days from birth and admitted to the NICU of Sant'Anna Hospital (Turin, Italy) in 2019 were exposed to the novel protocol and compared with a historical control group of infants admitted in 2018. Primary endpoint was the time to reach FEF.

RESULTS

Fifty-three infants were exposed to the novel protocol and compared to 60 not exposed controls. The main result of the study was the reduction of the time to reach FEF observed in the exposed group (23.68 ± 13.45 vs 29.31 ± 13.76 days; p = 0.03).

CONCLUSIONS

The implementation of the new protocol for the assessment of FI was associated to a reduction in the time to reach FEF. If this data will be confirmed by future controlled trials the protocol could be validated and used widespread in clinical practise.

ABS 6

OBSTETRICAL AND PERINATAL PREDISPOSING FACTORS FOR PERSISTENCE OF DUCTUS ARTERIOSUS IN A COHORT OF PREMATURE INFANTS: A RETROSPECTIVE STUDY

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INTRODUCTION

Ductus arteriosus (DA) is a fetal shunt allowing oxygenation during prenatal life. After birth, its closure should occur in 48-72 hours; however, preterm neonates can develop a persistent ductus arteriosus (PDA), especially in relation to low gestational age (GA) and birth weight (BW). PDA, especially if hemodynamically significant (hsPDA), can be associated with several degrees of short- and long-term consequences, impairing neonatal outcome.

PDA correct management is still debated, despite years of research and clinical practice [1].

AIM OF THE STUDY

Our study tried to identify obstetrical and perinatal factors potentially predisposing to hsPDA, allowing the precocious identifications of those neonates most likely to develop such condition.

MATERIALS AND METHODS

A population of n = 42 preterm neonates with GA at birth between 24 and 32 weeks and admitted to Neonatal Intensive Care Unit (NICU) of Duilio Casula Hospital, University of Cagliari was enrolled; the study was conducted between October 2019 and June 2020.

Cardiologic evaluation was performed by the neonatal cardiologist at 48-72 hours and hsPDA was assessed in case of PDA diameter (indexed for body weight expressed in kilograms) ≥ 1.5 and left atrium/aortic root ratio (LA/Ao) > 1.4.

During the hospitalization, all the newborns underwent instrumental and hematic exams according to the clinical needs.

All demographic data and the information regarding pregnancy, birth, neonatal management in delivery room, assistance in NICU, invasive and non-invasive ventilation, oxygen needs, surfactant administration, fluid balance, nutrition and drugs were recorded.

RESULTS

In our group, n = 8 subjects developed hsPDA at 48 -72 hours of life.

Mean GA resulted 29.2 ± 2 w, significantly lower in the group subsequently developing hsPDA (27.34 ± 2.3 w, $p < 0.001$). Mean BW was 1,343.43 ± 360 g, significantly lower in hsPDA group (996.62 ± 400 g, $p = 0.001$).

A significant difference was represented by mean Apgar score at 1', resulting significantly lower in the group of infants who subsequently developed hsPDA (4.12 ± 2.95, $p = 0.01$).

The use of surfactant for respiratory distress syndrome was more frequent in the hsPAD group ($p = 0.01$).

Among obstetrical factors, only maternal arterial hypertension resulted significantly associated with hsPDA ($p = 0.01$).

Not statistically differences were reported for neonatal sex and other pre- and perinatal variables.

CONCLUSIONS

In our sample of premature neonates, maternal arterial hypertension, lower values of GA, BW, and Apgar score at 1', and the needs for surfactant resulted the best predictors of subsequent development of hsPDA, in agreement with recently reported data [2-4].

Future studies on larger samples will clarify which could be the most accurate predisposing factors for hsPDA, to allow a precocious surveillance of such newborns and optimize their management.

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ABS 7

THE USE OF HUMAN MILK IN THE NICU. 10 YEARS OF EXPERIENCE IN HUMAN MILK BANKING

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The objectives indicated by EMBA and AIBLUD for Human Milk Banks (HMBs) are to support and promote breastfeeding and the donation of human milk (HM), encouraging scientific research on the topic, with the ultimate aim of improving the health of newborns. What is the balance of 10 years of activity of our HMB? In addition to feeding about 600 premature infants with HM donated by 780 mothers, the first result is the exclusive use of HM for preterm weighing < 1,800 grams. In the first hours of life, the minimal enteral feeding begins thanks to the bank milk, which is replaced by breast milk as soon as it becomes available.

The care of mothers who give birth, aimed at supporting milk production, has significantly improved the breastfeeding rates for late preterm (+25%) and the availability of mother's milk for VLBW infants, for whom breastfeeding rates at discharge have doubled. In our experience, even at very low GA or at VLBW and ELBW, there is the

chance to get a suitable milk production from both a quantitative and qualitative point of view, so to feed the children exclusively with their own milk while also donating it to the bank [1]. An HMB in the NICU can act as a facilitator for breastfeeding.
The extensive use of HM in the NICU has resulted into an important health opportunity by improving feeding tolerance and almost eliminating the incidence of NEC.
The research activity promoted by the HMB has given us the opportunity to understand and demonstrate how HM is a privileged site in relation to certain alterations of maternal biochemical profile [2].
We took part in a study that first considered the role of maternal adherence to the Mediterranean diet for the provision of anti-oxidative protection to human milk compounds, which may be an aspect of public health relevance as maternal milk's oxidative status may put infants on a certain health trajectory.
We understood which characteristics of donors and children can influence the volume and composition of HM (advanced maternal age, low birth weight or premature birth and primigravida status must not be a prejudice to donation) and that at gestational age < 29 weeks the protein content of HM is higher [3].
We also learnt that among the reasons of the HM donation is the altruism, which is prevailing in 84.3% of answers to questions asked to mothers, who described the experience of the HM donation as satisfying and not very demanding. We promoted this data because we believe that these feelings highlight a cultural model made of respect, sharing and solidarity that needs to be spread and safeguarded.
Further confirmation came during the months of COVID-19 pandemic, which have negatively impacted both breastfeeding and donation around the world, but have not reduced the donors of our territory, who have continued even in this difficult period to cover the entire nutritional needs of the NICU [4].

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ABS 8

KEY ROLE OF MATERNAL DIET DURING BREASTFEEDING: FROM EPIGENETICS TO FLAVOUR PREFERENCE DEVELOPMENT

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The health benefits associated with breastfeeding are now known in both the short and long term.
There are numerous scientific evidences in this regard, however further studies are needed to completely clarify the complex epigenetic mechanisms probably responsible for these effects, especially with regard to non-communicable diseases [1]. In this context, the nutrition of the new mother plays a crucial role. The effects are expressed both through a direct action that, by conditioning the composition of the milk itself, determines its nutriepigenetic potential and through an indirect action by influencing the microbiota of the breast milk, which will modulate the intestinal bacterial flora of the infant, in turn responsible for numerous epigenetics variations. Furthermore, breastfeeding plays a crucial role in the creation and modulation of the baby's taste.
To date, there are numerous data supporting the thesis that the quality of the taste experiences provided by breast milk favors a correct transition to solid foods during complementary feeding [2].
Finally, the ancient beliefs that hindered the dietary variety of the new mother are considered obsolete. Thus, today it is established that a correct gustatory stimulation from the beginning is the basis for a greater dietary variability in children, certainly indispensable in terms of health both in the short term and in the long period. However, this is only possible if the diet of the new mother is rich and variegated. In fact, the greater intake of fruit and vegetables and the lesser tendency to selectivity of breastfed children have been observed in cases in which the mothers, during breastfeeding, have made extensive use of vegetables, thus providing the milk

with an important aromatic profile, thanks also to the valuable contribution of the microbiota [3]. After all, this should not be surprising considering that it has been shown in various scientific studies that every child starts to taste their mother's diet already during fetal life through the olfactory molecules that, crossing the placenta, enrich the amniotic fluid.

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ABS 9

CEMENTOBLASTOMA IN A 15-YEAR-OLD GIRL

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BACKGROUND AND OBJECTIVE

Cementoblastoma is a benign, mesenchymal, odontogenic tumour that may grow around the apical half of tooth root [1]. It accounts for 1 to 6% of all odontogenic tumours, with only 100 cases reported in the literature [1]. The majority of patients are aged up to 30 years [1]. Surgical removal of the lesion along with the involved tooth is the treatment of first choice [2]. Its recurrence rate, probably related to an incomplete removal of the lesion, is a relevant event, since it involves almost 12% of these tumours [3]. At histology, cementoblastoma is characterised by the proliferation of plump, hypercromatic, active-looking cementoblasts on tooth root [1]. These cells, mixed with a fibrovascular stroma, lay down basophilic cementum-like tissue, sometimes calcified, organised in masses, thick trabeculae and peripherally radiating columns [1].

CASE REPORT

A 15-year-old girl presented with right emimandibular pain, associated with the progressive growth of an oral mass in the region of 33 and 34. At the Cone Beam computed tomography, an oval osseous mass, partly calcified, was observed at the apex of 35, and the diagnosis of cementoblastoma was suggested. Resection of the mass and the tooth was performed. At histology, fibrovascular stroma intermingled with focally calcified, basophilic material, arranged in thick trabeculae, with radiating distribution at the periphery of the lesion was observed. Inside the stroma, dilated vascular structures and osteoclast-like multinucleated giant cells were found. These features led to the diagnosis of cementoblastoma.

CONCLUSIONS

Here we report a case of a 15-year-old girl affected by a cementoblastoma of the maxillary left deciduous second molar. In younger patients odontogenic tumours are usually benign [2]. Cementoblastoma is a rare benign lesion, predominantly encountered in patients in their second or third decade of life [2]. Even if cementoblastoma is a rare finding, it should be taken into account in cases of dull pain and slow-growing jaw nodules in young patients [2].

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ABS 10

A 4-YEAR-OLD CHILD WITH DESQUAMATING RASH: ALWAYS REMEMBER STAPHYLOCOCCAL-SCALDED SKIN SYNDROME

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INTRODUCTION

Staphylococcal-scalded skin syndrome (SSSS), also known as Ritter disease, is a rare exfoliating skin disorder and it is a pediatric dermatological emergency. SSSS is an infection disease caused by *S. aureus* of Bacteriophage Group 2 producers of exfoliative toxins A or B. The primary sources of infection are usually the head and neck region, the umbilical area and the diaper. The toxins from the initial site of infection are released into the bloodstream and bind desmoglein-1, a glycoprotein present on the desmosomes of the superficial epidermis, causing its destruction. This results in

loss of keratinocytes adhesion, cleavage within the stratum granulosum and the classic presentation of SSSS: erythema, bulla formation and subsequent sheet-like desquamation.

CASE REPORT

We present the case of a 4-year-old presented to pediatric emergency department with scarlatiniform erythema, one-day fever (38°C) and six-days pharyngodynia. At physical examination, he had painful erythema of the cutaneous folds (peribuccal, periocular, perianal, antecubital fossa, axillary, neck and genital regions) with initially signs of blistering and exfoliation, exudative tonsillitis with a whitish-yellow exudate, neck swelling and bilateral conjunctival hyperemia. Nikolsky's sign was positive. Laboratory tests revealed signs of infections: neutrophilic leukocytosis (19.9 × 1,000/mmc with 60% neutrophils) and C-reactive protein (CRP) was 28 mg/l. SSSS was immeadiately considered as a possibile diagnosis and an intravenous antibiotic treatment with teicoplanin was promptly initiated. Serological tests for EBV, CMV, Mycoplasma, HSV 1-2, VZV were negative. Nasal swab and throat culture were performed before starting antibiotic therapy and after two days they resulted positive for methicillin-sensitive and penicillinase-resistant *S. aureus*. The child remained stable and after 5 days was discharged home on oral antibiotics.

DISCUSSION

SSSS is a serious disease with potentially life-threatening consequences. It commonly affects children younger than 6 years with a peak between 2-3 years of age. Widespread tender erythroderma and tissue paper-like wrinkling of the flexural and periorificial areas are the first signs to appear. Within 1-2 days, flaccid blisters develop within the erythematous areas and enlarge to form bullae. Bullae rupture easily, leaving a moist erythematous area that appear as scalded skin. Nikolsky's sign is a gentle pressure on apparently normal skin that leads to separation of the upper epidermis and it was positive. The skin cultures for *S. aureus* were positive in the sites of infections. Treatment should be promptly started with β-lactam agents, while vancomycin or clindamycin should be considered if methicillin-resistant strains of *S. aureus* are suspected. Differential diagnosis of SSSS includes toxic epidermal necrolysis (TEN), Stevens-Johnson syndrome (SJS), bullous impetigo, Kawasaki disease and scarlet fever.

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ABS 11

HYDROPS FETALIS DURING THE COVID-19 ERA

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INTRODUCTION

Hydrops fetalis is defined by the presence of pathologic fluid effusion in at least two fetal sites, including serous cavities (pericardial, pleural, and peritoneal), and associated subcutaneous edema [1-3].

Its etiology is non-immune (NIHF) in up to 90% of cases, characterized by the absence of maternal circulating red-cell antibodies.

CASE REPORTS

In the period between August and November 2020, two newborns born prematurely due to severe fetal hydrops were admitted to the Neonatal Intensive Care Unit (NICU) of University of Cagliari, Duilio Casula Hospital.

Case 1: female, 31^{+6} weeks of gestational age (GA), birth weight (BW) 2,300 grams, Apgar score 3-4.

Case 2: male, 30 weeks of GA, BW 1,700 grams, Apgar score 2-2.

In both cases, active resuscitation was necessary in delivery room, with endotracheal intubation, oxygen administration (FiO_2 1) and endotracheal surfactant at 10' of life; hydrops fetalis was diagnosed during a routine ultrasonography, in the absence of particular maternal symptoms and in a physiological pregnancy. Urgent cesarean sections were performed no later than three hours after diagnosis.

Both newborns required bilateral pleural drainages kept in place until complete effusion drainage. In both cases, a monolateral pneumothorax complicated the drainage process, but resolved completely.

High-frequency oscillatory ventilation (HFOV) with variable FiO_2 levels was required until drainages removal.
Cardiac inotropes (dopamine and dobutamine) were needed until cardiac function was valid.
Regarding differential diagnosis, immune etiology was excluded, as well as parvovirusB19, adenovirus, enterovirus and TORCH group congenital infections, congenital hearth defects and/or arrhythmias, inborn errors of metabolism, chromosomopathies (through karyotype and CGHarray), hemoglobinopathies (through microcythemia test), familial hemophagocytic lymphohistiocytosis, and mediastinal masses or abnormalities that can obstruct the venous return or lymphatic duct, which represent the currently known causes of NIHF.
Maternal nasopharyngeal swabs for SARS-CoV-2 were negative, as well as maternal and neonatal serological tests (Anti-SARS-CoV-2 IgM and IgG).

CONCLUSIONS

NIHF etiology may remain unknown in up to 25% of cases, classified as idiopathic [2]. In our two cases, potential differential diagnosis have been taken into account; despite several efforts, we did not find the etiology of NIHF.
Very recently, two cases of fetal skin edema during maternal COVID-19 infection have been described, suggesting a potential involvement of SARS-CoV-2 in fetal fluid effusion.
Although our cases were negative for viral search, we consider rather strange the chance of finding two cases so similar and close together, in the era of COVID-19, also considering the limits of sensitivity and specificity of current viral research methods.

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ABS 12

THE DIFFICULTIES PERCEIVED BY PARENTS OF CHILDREN WITH AUTISM SPECTRUM DISORDERS IN THE HEALTHCARE SETTINGS. A PILOT STUDY

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INTRODUCTION

Children with Autism Spectrum Disorders (ASDs) usually have comorbidities (e.g. epilepsy, attention deficit/hyperactivity disorder) and tend to access the health services more often than children with typical development. They may encounter difficulties in healthcare settings due to sensitivity to stimuli, anxiety, difficulty in communicating and dealing with unfamiliar places [1]. This can reduce therapeutic compliance and make the healthcare experience particularly difficult. Knowing the parents' point of view is important to counteract negative behavioral responses and improve the adherence to clinical care procedures [2]. The purpose of the study is to assess the difficulties experienced by children with ASDs in health service through their parents' perceptions, in order to define good practices to improve their care.

MATERIALS AND METHODS

A cross-sectional descriptive-observational study was conducted. From April to August 2020, a questionnaire was administered to parents of children with ASDs living in Italy, contacted through social networks and sector associations.

RESULTS

53 parents fulfilled the questionnaire (n = 42 mothers, 79.2%). The parents are between 25 and 51 years old (m = 39.2; sd = 6.3); 29 (54.7%) work and 18 (34%) have a university education. The children are between 2 and 12 years old (m = 7.0; sd = 2.6). The prevalence of male children is 83%.
For the care of children, the participants have turned mainly to pediatric wards (n = 44) and emergency departments (n = 39). 55.8% state that they are little or not at all satisfied with how the child is cared for. 47.2% are little or not at all satisfied with how the parent is involved in

the care of the child. 71.2% are little or not at all satisfied with how the parent is supported in the management of the child's pathology. Only 32.1% of parents perceive that doctors are helping their child a lot; as far as nurses are concerned, the percentage drops to 17%. 60.4% of parents found it difficult when they turned to a health service. Among the difficulties complained, 17 (32.1%) report poor preparation of health professionals with respect to autism, 9 (17%) care procedures too long and 7 (13.2%) difficulties in communication. 58.5% (n = 31) report that they found in pediatrics the best trained staff to assist the child ASDs.

CONCLUSION

The study shows high levels of parental dissatisfaction with health services due to the difficulties encountered during caring for their children. It might be useful to evaluate nurses and doctors' perspectives, in order to introduce dedicated actions and tools to improve caring relationship with ASDs children.

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ABS 13

DOUBTFUL CAT-SCRATCH DISEASE: THE IMPORTANCE OF HISTOLOGICAL EVALUATION

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BACKGROUND AND OBJECTIVE

Cat-scratch disease (CSD) is an infection caused by *Bartonella henselae* [1]. First described in the 1930s, its correlation to cats' scratch or bite has been discovered only in the 1950s [1]. It is usually characterised by fever, lymphadenopathy and lymphadenomegaly of the area of inoculation draining lymph node [1]. Dissemination to the central nervous system, eyes, liver and spleen has been reported [1]. CSD most frequently has a spontaneous resolution, with a tendency to resolve in 2 to 4 weeks [1]. Mild to moderate cases may necessitate treatment with antipyretics, anti-inflammatory drugs and antibiotics [1].

Since it is a self-limiting disease, CSD seldom is histologically evaluated: only patients with unresolving diseases or with uncertain diagnosis undergo lymph node biopsy [2]. At microscopy, CSD is characterised by early hyperplasia and follicular enlargement, followed by the development of necrotizing epithelioid cell granulomas evolving to geographic abscesses [3].

The aim of this study is to report a case of a CSD in a 5-year-old child.

CASE REPORT

A 5-year-old male presented at the Department of Otolaryngology of the University Hospital of Cagliari with lymphadenopathy and lymph-adenomegaly of left-lateral neck lymph nodes. Since the diagnosis was uncertain and the greater tight group of lymph nodes, with an overall diameter of 4 cm, was leading to tracheal compression symptoms, lymph node dissection was performed. At gross examination, the specimen of 4.3 x 2.5 x 1.7 cm showed a greyish cut surface.

Histologically, multiple assembled lymph nodes characterised by an altered architecture were observed. Lymph nodes showed numerous granulomas with central necrosis and frequent peripherally disposed multinucleated giant cells. At immunohistochemistry, CD20-positive B and CD3-positive T lymphocytes were well compartmentalised, whereas the multinucleated giant cells expressed CD68.

The case was finally diagnosed as a chronic necrotizing granulomatous inflammatory process, suggestive of CSD.

CONCLUSIONS

Herein we reported a case of a CSD in a 5-year-old male who underwent a lymph node dissection.

Lymphadenopathy and lymphadenomegaly in children might be due to multiple causes, both inflammatory and neoplastic, including lymphomas [3]. Clinical and laboratory data may help in the distinction between reactive and neoplastic processes, but sometimes they are not sufficient for this purpose, being the histological evaluation essential.

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ABS 14

THE BIRTH OF A NEWBORN AND HIS MICROBIOME

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INTRODUCTION

During pre-, peri- and post-natal phases, human microbiome is subjected to continuous qualitative and quantitative modifications, depending on several pathophysiological factors; due to these reasons, it can be affirmed that the birth of a newborn is also inevitably accompanied by the birth of its unique and specific microbiome.

DISCUSSION

Through a narrative review of available literature, we tried to point out the most relevant factors influencing neonatal microbiome, since intrauterine life.

Several maternal condition can influence fetal/neonatal microbiome, such as oral infections/periodontitis, maternal dysbiosis, preeclampsia, gestational diabetes mellitus, determining the increase in species such as *Clostridium spp.* and *Bacteroidetes spp.*, potentially involved in preterm birth [1, 2].

Mode of delivery (vaginal or cesarean section), as well as the place where it occurs (hospital or home) can influence in different ways neonatal early microbial colonization, with effects on intestinal and immune system maturation [3, 4].

Through vaginal delivery, the newborn acquires a microbiota more similar to maternal vagina or intestine; on the contrary, through cesarean section, it resembles maternal skin microbiome and external environment, resulting more rich in *Staphylococcus spp.*, *Corynebacterium spp.* and *Propionibacterium spp.*, and it is characterized by lower diversity.

After birth, antibiotic administration and breast-feeding seem the most relevant factors influencing neonatal microbiome.

Through breast milk, the mother can transfer to the newborn microbes, growth factors, immune components and stem cells.

Breastfed neonates, assuming about 800,000 maternal bacteria everyday, are characterized by gut microbes different from formula fed neonates, with a higher content of *Bifidobacteria spp.*, *Enterobacteria spp.* and commensal species in the first group and a lower percentage of *Bifidobacteria spp.*, *Bacteroides spp.* and *Lactobaccilus spp.* in the second group [5].

CONCLUSIONS

Maternal health before and during pregnancy, delivery mode and place, neonatal nutrition through breastfeeding or formula milk seem to have a strong influence on neonatal microbiome. Consequently, it can determine positive or negative effects on neonatal and child health, potentially influencing the onset of several diseases, such as necrotizing enterocolitis, diabetes, asthma, etc., and persisting along life.

In this perspective, a pregnant woman could be informed on the benefits she could guarantee to the offspring through her nutrition regimen and lifestyle, and body weight control. Obstetrics and Neonatologists could take into account such information to optimize delivery choices, perinatal and neonatal drugs and antibiotics administration and to promote breastfeeding.

Providing the most adequate microbiome to each newborn, starting from the womb, could improve short- and long-term health, because an effective newborn-microbiota interaction lays the basis for a life-long relationship.

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ABS 15

CONGENITAL SKULL DEPRESSION IN A PRE-TERM INFANT: A CASE REPORT

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INTRODUCTION

Neonatal skull depressions (SD), also called "ping-pong fractures", are usually rare with an occurrence estimated at 1 per 10,000 live births in western countries [1]. The cause is usually unknown; it has been suggested that a prolonged *in utero* or during labor compression by maternal pelvic bones, fetal limbs, myomas or intrauterine fibroids against the soft cartilaginous nature of fetal skull could result in SD; it could occur either as a consequence of digital pressure of the hands of the obstetrician [2, 3]. A conservative approach with watchful waiting during the first 4-6 months of life is usually recommended. Neurosurgical elevation and elevation with vacuum extractor or with a breast pump is generally reserved for neonates with a severe SD, with a size > 1 cm, a potential associated brain injury or without resolution within 6 months of watchful waiting. Usually, non-traumatic isolated SD have an excellent prognosis [2].

CASE REPORT

A preterm (32 weeks) male infant weighing 1,560 g was delivered from caesarean section for placenta praevia to a 39-year-old multigravida (2 previous spontaneous abortions) with Hashimoto's thyroiditis and MTHFR heterozygous mutation. Antenatal history was significant for threatened preterm labor. Apgar score was 7-8-8. At birth, he required non-invasive respiratory support for a respiratory distress, which was suspended in the sixth day of life. Clinical examination at birth showed right parietal bone depression, with no associated bruising or oedema. Neurological examination was normal. Cerebral ultrasound during the first 24 hours of life showed bilateral parietal-occipital periventricular hyperechogenicity with a poor view of the area adjacent to the parietal depression. Skull X-ray revealed no discontinuities or fracture of the right parietal bone, while its peripheral portion was radio-transparent as a cartilaginous gap. A subsequent cerebral ultrasound performed on the tenth day of life highlighted a dubious image in right parietal-occipital area characterized by marked hyperechogenicity of 1.5-0.8 cm diameter. Further brain imaging (MRI/CT scan) are planned in order to better understand the clinical meaning of this area, when the infant will be clinically stable.

CONCLUSION

We have presented a non-traumatic, congenital SD in a neonate. This rare condition usually causes intense parental stress [3]. Its natural history is variable, with a dominant spontaneous resolution by about 6 months of age. In our case, the absence of an associated fracture or neurological deficit mainly correlates to a congenital SD due to *in utero* compression. Further investigations are necessary to delineate the most appropriate treatment.

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ABS 16

BREASTFEEDING AND POST-PARTUM SUPPORT: A STUDY OF 161 INFANTS AND THEIR MOTHERS FROM THE "SOS MAMI" SURGERY

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INTRODUCTION

Breast milk is the ideal food for the baby. It leads to a reduction in infant morbidity and mortality and is equally important for the woman who breastfeeds because it is associated with long-term benefits [1, 2]. Unfortunately, hospital stays after childbirth are short and do not always allow the woman to be discharged with a correct breastfeeding initiation, so it is important to provide postpartum support in order to avoid the risk of developing maternal and neonatal issues [3].

AIM OF THE STUDY

The study aims to evaluate the effectiveness of breastfeeding counseling, aimed at clarifying doubts and concerns of new mothers, in order to avoid premature abandonment of breastfeeding and to provide further counseling on sleep, on colic and minimal pathologies.

PATIENTS AND METHODS

The data collection was performed at the "SOS MAMI" surgery at the Azienda Ospedaliero-Universitaria of Monserrato, from January to

December 2019, on 161 children and their mothers, who were given a structured questionnaire. In addition, data collected in outpatient visits have been extrapolated from medical records and compared with those in the literature.

RESULTS

The questionnaire highlights how the quality of the information received prior to the visit is insufficient to meet the needs and requirements of parents in the management of the newborn. In fact, 71% is dissatisfied with information on sleep, 52% on crying, 80% on colic and 38% on breastfeeding.

The analysis of the records shows how the percentage of newborns who are exclusively breastfed goes from 52.8% at the first visit to 75% at the fourth visit.

It was also seen how maternal support aimed at breast pathology (fissures, breast pain and engorgement) prevented the early abandonment of breastfeeding.

CONCLUSIONS

The study confirms how important a global support is in the post-discharge and in the following months and how it provides a considerable help in the management of daily life and the most frequent physiological alterations in the newborn. It has been seen that, while the "SOS MAMI" surgery has taken care of patients with a wide range of ages and diseases, it has intercepted what the mothers really need. In the first months they need more counseling, not only on the practice of breastfeeding, but also on the diagnosis and treatment of maternal problems that hinder the continuation of breastfeeding and/or disturb the normal mother-infant balance in everyday life.

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ABS 17

POTENTIAL PITFALLS OF $EtCO_2$ MONITORING DURING PAEDIATRIC OUT-OF-HOSPITAL CARDIAC ARREST. A CASE REPORT

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BACKGROUND

End-tidal CO_2 ($EtCO_2$) monitoring is an established aid during adult and paediatric advanced life support. It can help rescuers rule out oesophageal intubation, optimize chest compressions and detect the Recovery Of Spontaneous Circulation (ROSC). An $EtCO_2$ > 15 mmHg could suggest a good-quality Cardio-Pulmonary Resuscitation (CPR), but a precise threshold value has still to be found. A sudden and persistent rise in $EtCO_2$ during CPR to normal/supranormal values is highly suggestive of ROSC and should prompt CPR interruption and rhythm check [1].

CASE REPORT

In December 2018, in Italy, a 17-month-old child suffered cardiac arrest due to food inhalation, after unsuccessful attempts to relieve the obstruction by lay bystanders. The Helicopter Emergency Medical Service found the child pulseless with only agonal breaths, and started the advanced support according to the European Resuscitation Council (ERC) guidelines [1]. Presentation rhythm was a slow Pulseless Electrical Activity (PEA). Tracheal intubation was performed and high-flow O_2 administered; intraosseus access was positioned on the proximal tibia and adrenaline administered as per protocol. After approximately 5 minutes, $EtCO_2$ was monitored. During the CPR an $EtCO_2$ of 35 mmHg was noted and, according to the ERC guidelines, CPR was interrupted to recheck the rhythm. Despite this $EtCO_2$ value, asystole was present and CPR restarted. ROSC was never achieved and the child was declared dead after about 75 minutes of reanimation.

CONCLUSIONS

Data about the use of $EtCO_2$ during out-of-hospital paediatric life support are scarce. In a retrospective multicenter study of in-hospital paediatric cardiac arrest, the median $EtCO_2$ was 23 mmHg and the ROSC rate as high as 71% [2]. In the present case, $EtCO_2$ reached values of 35 mmHg, which are in the normal range. According to the current knowledge, this is highly suggestive of ROSC and the guidelines recommend stopping CPR to check the rhythm, which was asystole in this case. We hypothesize that the lack of association between normal $EtCO_2$ values and

restored circulation could be explained by either the very-good-quality CPR or the asphyxial origin of the cardiac arrest, leading to CO_2 retention [3] and profound hypoxia. Thus, the strict adherence to this recommendation could lead to frequent pulse checks and fragmentation of CPR, and potentially worsen the outcome.

Despite the potential benefits of $EtCO_2$ monitoring during advanced life support, uncertainty still remains on the threshold values and their interpretation in real case scenarios.

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ABS 18

INTERACTIONS BETWEEN PREECLAMPSIA AND COMPOSITION OF THE HUMAN MILK: WHAT DO WE KNOW?

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Preeclampsia (PE) is a gestational hypertensive syndrome characterized by a complex disease with variable clinical manifestation. An aspect of increased interest is the possible effect of PE on the mammary gland (and therefore on breast milk composition) considering that mother's own milk is always considered the first choice for nutrition of all neonates. Human milk (HM) is a unique food believed to contain biological factors involved in both short- and long-term benefits. The aim was to review the published papers on this topic, and to offer additional insights on the role of this gestational pathology on the composition of HM. This review was performed by searching the MEDLINE, EMBASE, CINHAL and Cochrane Library databases. A total of 15 articles were selected. Overall, the findings from the literature suggest that PE can alter the composition of HM milk. Nevertheless, the number of studies in this field are scarce, and the related protocols present some limitation, e.g., evaluating the variability of just a few specific milk biochemical markers in association with this syndrome.

ABS 19

MULTIPLE ACCESSORY TRAGUS IN A 4-YEAR-OLD CHILD. CLUES OF A GOLDENHAR SYNDROME?

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INTRODUCTION

Tragus is a cartilaginous projection, situated anterior to the opening of the ear. Accessory tragus is a developmental defect of the external ear [1]. The incidence of accessory tragus is 17:10,000 habitants [2]. The accessory tragus is usually congenital but it may be diagnosed also in infancy.

Accessory tragus is associated with many congenital syndromes characterized by multiple malformative lesions, including oculoauriculovertebral syndrome (Goldenhar syndrome [GS]), Townes-Brocks syndrome, VACTERL syndrome, mandibulofacial dysostosis (Treacher-Collins syndrome) and 4p syndrome (Wolf-Hirschhorn syndrome) [2].

GS is the most common disorder associated with the development of accessory tragus. GS is an autosomal recessive congenital syndrome involving defects in structures developed from the first two branchial arches during gestation. The triad of anomalies characterizing this syndrome includes accessory auricular appendages, epibulbar dermoid cysts and defects of the vertebral column [3].

CASE REPORT

A 4-year-old girl underwent surgery for tonsillar hypertrophy and 4 auricular appendages. Tissue samples from surgery have come to our attention, appropriately formalin-fixed. The surgical samples from the appendages, of a size between

13 x 12 x 10 mm and 6 x 5 x 4 mm, were split in half along the major axis, routinely-processed and paraffin-embedded. 5-micron-thick tissue sections were stained with hematoxylin-eosin.
At histology the lesions showed a regular epidermis with multiple small hair follicles, abundant subcutaneous adipose tissue surrounding centrally well-developed cartilage. On these bases, a diagnosis of accessory tragus was performed and further investigations led to the final diagnosis of GS.

CONCLUSION

Given the frequent association of accessory tragus with numerous syndromic complexes such as GS, it would be recommended to advise the clinicians to investigate any malformations which may lead back to GS or any other syndrome.

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ABS 20

NONINVASIVE MEASUREMENT OF BILIRUBIN IN TERM NEONATES

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INTRODUCTION

Transcutaneous bilirubinometry (TB) is a non-invasive method for measuring bilirubin (B) levels. The measurement is performed by pressing the bilirubinometer (BM) against the sternum or forehead. Thus, a B level result is obtained immediately and can be used to determine the need for further testing. TB is convenient for use in hospital and outpatient settings. The aim of the study was to compare the results of transcutaneous (TCB) and serum bilirubin (SB) for newborns performed with BM KJ-8000 in newborns of Bulgarian origin.

MATERIALS AND METHODS

Included are 252 samples obtained from January 2017 to November 2020 from full-term newborns born in University Hospital Medica Ruse Ltd. Criteria for inclusion of newborns: the parents are Bulgarian citizens, GA ≥ 37 weeks, birth weight ≥ 2,500 g, clinically pronounced jaundice from 1st to 5th day. TCB is obtained by placing KJ-8000 on the forehead; areas of bruising, hair growth, nevi, hemangiomas are avoided. Three consecutive measurement experiments were performed and the average result was taken. SB is obtained from 0.5 ml of a blood sample taken within 15 minutes from TB by venipuncture. SB is performed with BioSystems BA 400 BM working on the principle of spectrophotometry.

RESULTS

Of the 727 full-term infants, 252 TCB and SB samples were compared. 177 results were taken before phototherapy, and 75 were after 12 hours from the end of phototherapy. SB value on day 1 – 117.2 ± 21.8; day 2 – 159.5 ± 35.9; day 3 – 179.2 ± 35.3; day 4 – 195.4 ± 33.1; day 5 – 193.3 ± 30.65 μmol/L. TCB on day1 – 120.6 ± 21.5; day 2 – 161.2 ± 39.2; day 3 – 184.2 ± 32.3; day 4 – 181.5 ± 21.1; day 5 – 179.7 ± 22.5 μmol/L. Pearson's correlation analysis showed a correlation coefficient for days 1 to 5, respectively r = 0.824; 0.933; 0.868; 0.752; 0.822.

CONCLUSIONS

Given the strong correlation between TCB and SB levels, TB is appropriate as a less traumatic method for monitoring jaundice in full-term infants.

ABS 21

STAPHYLOCOCCAL SCALDED SKIN SYNDROME IN A 20-DAY-OLD INFANT IN COVID-19 PANDEMIC: CASE REPORT

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BACKGROUND

Staphylococcal Scalded Skin Syndrome (SSSS) describes a spectrum of superficial blistering skin disorders caused by the exfoliative toxins of *S. aureus*. Differential medical diagnosis includes toxic epidermal necrolysis, SSSS, epidermolysis bullosa, and Stevens-Johnson syndrome. Morbidity and mortality vary greatly.

CASE PRESENTATION

During this case report we highlight the case of SSSS with bilateral blefaroconjungtivitis in 20-day-old infant by discussing clinical and management issues.

The diagnosis of SSSS was reached based on clinical features and positive blood culture report. Successful results are achieved during this case because of timely and proper management.

CONCLUSIONS

This case report highlights SSSS and its challenges in diagnosis and treatment.

It remains an emergency and a possible fatal condition in neonates.

Early diagnosis, prompt treatment, and following aseptic measures in the Neonatal Intensive Care Unit are the mainstay for its successful management.