Case 2: Mother was 34 years old smoker and multiparous. Antenatal ultrasound scan showed a left sided 25 × 33 mm intracranial arachnoid cyst.

Postnatal cranial ultrasound performed on day 3 of life showed a large arachnoid cyst 37 × 47 mm in size on the left posterior area of the brain. At the Neurosurgical follow up clinic MRI showed the cyst was stable in size with mild mass effect noticed. The baby remains under close follow up and monitoring by the neurosurgical team, with conservative management until the present at age of 16 months.

Objectives

Methods

Results Review & Discussion: Arachnoid cysts are benign cysts that occur in the cerebrospinal axis in relation to the arachnoid membrane. They are most commonly developmental anomalies, however some are acquired and they represent 1% of all space occupying lesions in childhood.

Arachnoid cysts in the antenatal period can be found in isolation or with other intracranial abnormalities associated. The antenatal diagnosis should be confirmed by neonatal neuroimaging; cranial ultrasonography is the first line imaging modality and should happen within the first 24 hrs of age. Brain MRI is the gold standard investigation and should happen within the first 2 weeks of life. Antenatally diagnosed arachnoid cysts may remain clinically silent in postnatal period or even regress spontaneously; but they usually have a tendency to grow rapidly in the perinatal period.

There is no clear guidance on the most appropriate management strategy for these cases. Management include different types of neurosurgical procedures, but endoscopic ventriculocystocisternostomy seems to be the overall preferred approach. **Conclusions** Arachnoid cysts are rare and can remain silent during childhood before presenting with clinical manifestations. Rapid enlargement of incidentally diagnosed antenatal arachnoid cysts can occur in perinatal period. Serial evaluation by imaging in the perinatal period is necessary to demonstrate the rapid cyst enlargement and the need for appropriate intervention. Neurosurgical approach is variable and dependent on clinical features and the department's experience or preference, but the cysts which occur in isolation without any other intracranial anomalies and with normal karyotype usually lead to a good outcome.

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THE RELATIONSHIP BETWEEN SERUM VITAMIN D LEVELS AND ASTHMA PREDICTIVE INDEX (API) IN WHEEZY INFANTS

Noha AbdelSalam Ahmed AbdelSalam Heikal, Amal Osman, Rasha Elashry. *Egypt*

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Background The relationship between wheezing in infancy and future development of asthma has been under investigation for a long time. API is a widely accepted clinical index to define asthma risk. On the other hand, vitamin D was found to play a principal role in decreasing disease severity of asthma and other allergies.

Objectives To delineate the relationship between the serum level of vitamin D and asthma predictive index in wheezy infants.

Methods In this cross-sectional study fifty wheezy infants and thirty healthy controls of matched age and sex were included. Feeding history and exposure to environmental factors and

were assessed through parents' questionnaire. The clinical characteristics of the children were assessed as well as the asthma predictive index. The serum levels of vitamin D, Calcium and Phosphorus were measured in all patients. Correlation analysis was used to evaluate the relationship between homogeneously distributed variables.

Results Thirty-three of the fifty wheezy child (66%) were recurrent wheezers (had more than three wheezing attacks/year). The Asthma Predictive Index (API) was found to be positive in thirty two patients (64%). Serum Vitamin D was significantly lower in wheezy infants compared to control group as well as API (+ve) patients compared to API (-ve) patients ($p=0.013$, $p<0.01$ respectively).

Serum Vitamin D level showed significant (-ve) correlation with number of previous wheezing episodes ($p<0.01$). No significant difference was found between the API (+ve) group and API(-ve) group in terms of other laboratory markers (Calcium, Phosphorus and Eosinophil count).

Conclusions Vitamin D deficiency was found to be more prevalent in wheezy infants than controls, suggesting it might play an underestimated role in pathogenesis of wheezes in infants. We also suggest that serum vitamin D levels might be used as a biomarker for prediction of (+ve) API state, raising the possibility of having childhood asthma.

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EARLY-LIFE SKIN MICROBIOME AND SUSCEPTIBILITY FOR DIFFERENT ECZEMA SUBPHENOTYPES BY ATOPIC STATUS

Yehao Chen, Jennifer Wing-Ki Yau, Wing Hung Tam, Zigui Chen, Paul Kay-Sheung Chan, Ting Fan Leung. *Hong Kong*

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Background Eczema is a common skin inflammatory disorder during infancy. An increasing number of studies have shown an association between eczema and skin microbiome fluctuations. Skin dysbiosis was reported to precede the onset of infant eczema by both culture-based and sequencing-based analyses. However, the pathophysiology of eczema is highly complex and heterogenous. Given that eczema is an umbrella term for atopic (IgE-associated) and non-atopic (non-IgE-associated) forms of eczema, whether skin microbiome plays an important role in determining the subtypes of eczema by atopic status still remains unclear.

Objectives This prospective study aimed to investigate whether profile of early-life skin microbiome in atopic eczema patients was different from that of non-atopic eczema patients.

Methods We followed up 120 Chinese infants in Hong Kong from childbirth for one year. At 12 months, eczema was diagnosed by paediatricians according to Hanifin and Rajka criteria, and meanwhile skin prick test (SPT) for common inhalant and food allergens was conducted to assess atopic status. Based on diagnoses and SPT results, the 120 subjects were further subclassified into atopic eczema group, non-atopic eczema group, and non-active eczema group at 12 months. For each subject, microbes in skin swabs collected at left antecubital fossa were longitudinally sampled at 1, 6 and 12 months. Skin microbiome data was generated by 16S rRNA sequencing. Differentially abundant taxa between atopic and non-atopic eczema groups were assessed by a newly developed statistical methodology called Analysis of Compositions of Microbiomes with Bias Correction (ANCOM-BC).

Results Nighty-seven subjects completed this study, and 33 (34%) had active physician-diagnosed eczema at 12 months. Twenty-six out of 81 (32%) subjects showed positive in SPT. Eighteen was classified as atopic eczema patients, while 12 were classified as non-atopic eczema patients. During the study period in total 297 skin swab samples were collected. Alpha diversity represented by Shannon ($p=0.001$) and Simpson ($p=0.004$) indices significantly increased from 1 month to 6 months age, and beta diversity ($p=0.001$) differed across time as well. Relative abundance of *Staphylococcus* ($p<0.001$ and 0.04 respectively) and *Corynebacterium* ($p<0.001$ and <0.001 respectively) progressively decreased across time (adjusted p -value: 1 month to 6 months vs 6 months to 12 months). Alpha diversity of skin microbiome at 12 months was significantly lower in atopic eczema patients than that in non-atopic eczema patients (Shannon $p=0.002$, Simpson $p=0.001$). Alpha diversity at 1 month and 6 months did not show significant differences among groups. Differences regarding beta diversity and taxa abundance were not found between atopic and non-atopic eczema patients across time.

Conclusions Skin microbiome profiles differ slightly between infantile eczema with and without atopy. Alpha diversity of skin microbiota at left antecubital fossa is lower in atopic eczema patients compared with that of non-atopic eczema patients only during flare-ups at 12 months. This study cannot detect such difference at earlier time points.

369 KNOWLEDGE AND AWARENESS OF AUTISM SPECTRUM DISORDER AMONG PAEDIATRICIANS AND PRIMARY HEALTHCARE PROFESSIONALS IN SINGAPORE

Sharline Suhumaran, Geraldyn Leong, Chui Mae Wong. *Singapore*

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Background Autism Spectrum Disorder (ASD) is on the rise globally and is the leading cause of disease burden in children between the ages of 0 and 14 years in Singapore. Early identification of ASD is vital for timely referrals to specialists for early intervention which confers a better prognosis. Barriers that contribute to the delayed diagnosis of ASD include inadequate knowledge and inaccurate beliefs about ASD among healthcare professionals. Surveys on ASD awareness among medical professionals date back to the 1980s and have shown that ASD is an often-misunderstood condition with misperceptions about clinical features prognosis, and management.

Objectives This study aims to evaluate the awareness of ASD among Paediatricians and other healthcare professionals in Singapore, and to identify gaps in their knowledge that could impede early diagnosis and intervention for ASD.

Methods Healthcare professionals from various institutions were recruited to participate in this study. A survey was conducted online via Google Forms and comprised questions on demographic information, perception and knowledge of ASD.

Results Of 181 healthcare professionals who completed the survey, 89% worked with preschool children regularly. Yet only 43.7% felt confident in identifying signs of ASD, and only 27.1% had undergone previous training on ASD. Only 8.3% correctly identified all four early warning signs of ASD. Although 97.2% felt it was necessary to refer children with suspected ASD to specialists, only 49.7% would refer immediately, with 31.5% still practicing a 'watch and wait' approach.

Some professional groups were more likely to believe in alternative therapies for ASD than others.

Conclusions Results of study show that many Paediatricians and primary healthcare professionals in Singapore still lack the ability to correctly identify early warning signs of ASD. Furthermore, misconceptions about 'outgrowing ASD' along with the misunderstandings on the communicative and cognitive abilities of children with ASD seem little different from earlier surveys dating back to the 1980s. In addition, more than half (73%) of our survey respondents had not received prior training on ASD, which could explain the gap in knowledge of ASD. In order to bridge the gap in knowledge and to raise awareness of ASD among healthcare professionals, more clinical forums and workshops should be held. Keeping abreast with child development and common neurodevelopmental disorders should be an important part of our Continued Medical Education (CME) efforts as members of the healthcare community here in Singapore.

370 CYTOKINE STORM IN PRETERM NEWBORNS, BORN TO COVID 19 POSITIVE MOTHERS, THEIR PRESENTATIONS, MANAGEMENT AND OUTCOMES IN A TERTIARY CARE CENTRE IN GUWAHATI

Geetanjali Sahariah Khound. *India*

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Background Novel corona virus disease is caused by SARS-COV-2 virus. The consequences of this disease is largely unknown in neonates, specifically in Preterm newborns. Though Cytokine storm is an extremely dangerous event, it is treatable if diagnosed in proper time.

Objectives Our aim of the study is to discuss the events that the two newborn babies born to covid 19 positive mothers, went through during their cytokine storm due to transplacentally transferred covid IgG ; their treatment and outcome.

Methods Two Preterm newborn babies- one of them was very low birth weight (VLBW) baby (birth weight 1.25 kg), delivered at 32 weeks in November 2020 to a covid 19 (RT-PCR) positive mother with preeclampsia and PROM; and another appropriate for gestational age (AGA) baby (birth weight 2.5 kg) born at 33 weeks in December 2020 to a mother who was covid RT-PCR positive at 2nd trimester of pregnancy with GDM and PROM more than 24 hrs are discussed here.

The 1st baby had severe birth asphyxia, MSL and respiratory distress soon after birth with SPO₂ in room air was 70%-80%. She was treated with nasal prong CPAP with PEEP 5, iv antibiotics, caffeine citrate, iv fluid and supportives. All Blood reports were within normal limit and blood C/S showed no growth and covid RT-PCR was negative. At day 3 of life baby started having frequent episodes of apnoea, desaturation, tachycardia and shallow breathing. As the mother was covid 19 positive; inflammatory markers were checked which revealed IL6-4318 pg/ml, d Dimer -1450, Ferritin-514.6 ng/ml, LDH-687, procalditonin >100 ng/ml, Trop I-119.9 ng/L, NTproBNP-1008, platelet counts- $55 \times 10^3/\mu\text{L}$, PT-18.0 secs INR-1.341, APTT-48.9 secs and covid IgG- 3.48 with B/L opacity on CXRay. The mother also found to have covid IgG -3.48 at the same time. Accordingly iv steroids and IVIg was started along with SC LMWH. The child responded to treatment well and started tolerating feeds and gaining weight.