Case A thriving, term five-month old infant was admitted with symptoms suggestive of bronchiolitis and lower respiratory tract infection. In her medical history she had mild eczema at eight weeks old, was exclusively breastfed from birth and was unvaccinated. Admission investigations showed an elevated c-reactive protein of 41 mg/L, and white cell count (WCC) of $7.8 \times 10^9/L$ with lymphocytes of $0.7 \times 10^9/L$. Chest radiography showed bilateral lung field opacifications. She was treated with intravenous (IV) amoxicillin and supplemental oxygen. Viral throat swab and stool samples respectively isolated rhino/enterovirus and norovirus. Cough swab and nasopharyngeal aspirate (NPA) isolated methicillin-sensitive staphylococcus aureus and scanty haemophilus influenzae respectively. Good clinical response to therapy was observed and she was discharged after 10 days.

Her respiratory symptoms returned following discharge; she developed a purulent ear discharge treated with oral co-amoxiclav by her GP. She was readmitted with persistent bilateral pneumonia shortly after this. Repeat investigations showed a WCC of $3.2 \times 10^9/L$ with lymphocyte count of $0.1 \times 10^9/L$. IV cefuroxime, PO azithromycin and oxygen therapy were commenced. Repeat NPA was positive for rhino/enterovirus and parechovirus. Immunoglobulin subsets showed severe deficiency of IgG, IA and IgM. Lymphocyte subsets demonstrated undetectable B cells, minimal T cells and deficient NK cells consistent with SCID. IV ceftriaxone and co-trimoxazole were commenced with aciclovir and fluconazole prophylaxis. Weekly intravenous immunoglobulin therapy (IVIG) was commenced and definitive treatment with haematopoietic stem cell transplant (HSCT) is planned. Genetic testing revealed RAG2 mutation. Serial viral load testing showed a gradual increase in the CT (crossing target) with weekly IVIG treatment indicating significant reduction in parechovirus viral load.

Discussion Without timely diagnosis and management, SCID is typically fatal within the first year of life. Although HSCT is the only definitive treatment option, IVIG and broad antimicrobial prophylaxis is life-saving. In this case, repeated IVIG therapy correlated with reduction in parechovirus viral load and clinical improvement.

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P377 COMPARISON OF THE IMMUNE RESPONSE TO BCG VACCINATION IN NEWBORN BABIES BORN FOLLOWING ASSISTED REPRODUCTION, WITH THOSE BORN BY NATURAL CONCEPTION: A PROSPECTIVE COHORT STUDY

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Background Various studies have reported conflicting findings regarding the growth, development, congenital anomalies and co morbidities in babies born following ART, in comparison to their naturally conceived (NC) peers. However hardly any studies so far have reflected on the immune function and response to routine newborn vaccination in these babies.

Study design/Methodology 58 term, AGA, Singleton babies born following assisted reproduction and weighing >2.5 kg were administered 0.1 ml of BCG vaccine within 48 hours of birth. Likewise 62 babies (matched cohorts) born following natural conception were also administered BCG in their left deltoid insertion. At 3 months of age during routine follow up visits their BCG scars were analysed by the same observer. At 6 months of age those babies in both the groups with visible BCG scars, were administered 5 TU PPD (0.1 ml) in their left forearm. After 72 hours the maximum transverse diameter of the indurations were measured (by a single observer). An induration diameter of >5 mm and <10 mm were considered a positive tuberculin conversion rate.

Results Out of the 58 babies [30 (51.72% were males, with a mean birth weight 2.56 kg (SD 0.05)] born following ART, 52 had developed clearly visible scar (Mean scar size 3.91 mm with a SD 0.36) marks. So the scar failure rate was 10.3% (6/58). Out of the 62 naturally conceived babies [32 (51.61%) were males with birth weight (mean 2.61 kg SD 0.06)] 55 had BCG scars (mean scar size 4.13 mm SD 0.40). The scar failure rate was 11.2% (7/62). The positive tuberculin skin test conversion rate in the naturally conceived group of babies were 49 out of 55 with BCG scars. Hence the scar conversion rate in this group was 88.71% (49/55). While in the ART group 36 out of 52 had a positive skin test conversion. So the scar conversion rate in this group was 69.23% (36/52).

Conclusion The size of BCG scars is significantly more in the NC group in comparison to the ART group. There was a significantly lower tuberculin skin test conversion rate in the ART group in comparison to the NC group, as per this study. The scar failure rates were almost identical in the two groups. Further bigger studies are needed to evaluate the implication (if any) of this finding. We need to explore whether this findings truly reflect any deviation in the cell mediated immune response in the ART group.

P379 CHILDHOOD BRUCELOSIS IN AL BAHA, KSA (EPIDEMIOLOGICAL AND CLINICAL OBSERVATIONS IN 209 CASES)

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Introduction and aim of the work

Saudi Arabia is hyper endemic for Brucellosis, with more than 8000 cases reported each year to public authorities.

The aim of the study is to document the epidemiological, clinical and laboratory pattern of brucellosis in children of Al-Baha, also to ascertain the efficacy of certain antibiotic regimen to treat the disease.

Patients and methods All patients less than 13 years old in Al-Baha whose diagnosis was brucellosis during the study period (October 2016-September 2017) were included in the study. Diagnosis was based on clinical grounds confirmed by serology and culture. The initial treatment for children <8 years old consisted of Rifampicin 15 mg/Kg/day and Co-trimoxazole (TMP/SMX) of 10/50 mg/Kg/day, given for 6 weeks. For older children, Doxycycline (4 mg/Kg/day) was substituted for co-trimoxazole. Those who were very ill and toxic were in addition administered gentamycin (5 mg/Kg/day) for 7 days.

Results 209 patients were treated for Brucellosis during the study period; (45% inpatients and 55% of them were outpatients). 96% percent of the patients had history of direct animal contact (Cattle, Goats and Camels). Raw milk was ingested regularly by 46% of the patients. Fever was the most common (100%) manifestation, followed by sweating (63%), limb pain (57%) and arthropathy (49%), splenomegaly (23%) and hepatomegaly (19%). Detected hematological findings included leucopenia (21%), anemia and thrombocytopenia in 20% and erythrocyte sedimentation rate was high in 82% of our cases. Confirmatory tests included the standard agglutination test (positive in 97% of cases) and blood culture (positive in 43% of cases). The main subtypes detected by blood culture were: *Brucella Melitensis* (74%) and *Brucella Abortus* (26% of them). Antibiotic treatment differed according to age as: Rifampicin + TMP/SMX for patients ≤ 8 years old (66.5%) and Rifampicin + Doxycycline for those > 8 years old (33.5% of cases). The duration of treatment continued for 6 weeks (95%) increased to 12 weeks (5% of patients), with satisfactory clinical and laboratory response. The mean duration of hospital stay was 7.3 days.

Conclusion In conclusion, brucellosis is an important public health problem in Al-Baha area and there is great need for raising the public awareness regarding its seriousness. To combat this preventable disease, the following steps must be taken: (1) Eradication of brucellosis in animals, 2) Pasteurization of milk and dairy products,

3) Health education specially to highlight the importance of boiling raw milk before drinking.

P379.1 COMPARATIVE ANALYSIS ON THE EFFICACY OF ANTI-BACTERIAL VERSUS NON-ANTIBACTERIAL DETERGENT AFTER 24-HOURS OF DUTY ON RESIDENTS OF PERPETUAL HELP MEDICAL CENTER BIÑAN

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Objective To compare the effectiveness of bacterial growth between anti-bacterial detergent versus non anti-bacterial detergent in the disinfection of white coats of resident doctors.

Design This was a blinded experimental study of 30 white coats from residents. The white coats were randomly grouped: the first used an anti-bacterial laundry detergent, and the second used a regular detergent. Each coat was sampled from three areas, the dominant hand's (1) lapel, (2) cuff, and (3) pocket areas. Samples were taken three times (1) after at least 24 hours of duty (2) after machine-washing the white coat; and (3) after machine-washing and after another at least 24-hour duty of the participant. The swabs were directly inoculated into agar and isolated bacteria were assessed thru biochemical reaction.

Setting The study was done in a tertiary hospital in Binan, Laguna, Philippines

Participants Total enumeration of 30 resident physicians participated in the study.

Main Outcome Measure It was hypothesized that an antibacterial detergent would be more effective than a non-antibacterial one in the disinfection.

Results There was no significant difference in the disinfection when using either antibacterial versus non-antibacterial detergent. Majority of the white coats have an isolated growth in at least one area (53.3%), however growth was mostly none when compared to each area. Few isolates of *Streptococcus* and fungal growth were noted ($p.269>0.5$). Moreover, out of the 27 microorganisms isolated only two were noted to be non-pathogenic.

Conclusions In the white coats investigated for the effect of antibacterial detergent versus non-antibacterial detergent yielded no significant difference, suggesting that the isolates were considered to be relatively insignificant and that no variations existed as to the choice of detergent for washing the white coat.

P380 TIME TO ANTIBIOTICS IN PAEDIATRIC FEBRILE NEUTROPENIA – EXPERIENCE OF A REGIONAL UNIT

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Aim The aim of this study was to identify the mean Time To Antibiotics (TTA) for children with cancer who present with Febrile Neutropenia to a regional paediatric unit, and explore the barriers to achieving a TTA <60 minutes. Research has shown an increase in mortality and adverse outcomes when delays occur (M, 2013).

Methods All eligible children admitted with Febrile Neutropenia between 1st January 2016 and 31st March 2017 were identified. Both the median and logarithmic mean times to clinical assessment, investigation and TTA were calculated using MedCalc. Medical staff completed a survey to identify barriers to achieving the TTA.

Results Ten children were admitted with febrile neutropenia during the timeframe of the study. Three children did not have their arrival time recorded, therefore were excluded (N=7). All were successfully treated.

The mean time to phlebotomy was 35 minutes (median 25; range 5–135). The mean time to clinical assessment was 72 minutes from arrival (median 60; range 10–135 mins), and mean time to peripheral culture was 77 minutes (median 70; range 20–155). Our primary outcome, Time to Antibiotics, was calculated as a mean of 144 mins (median 135; range 60–225).

20 medical staff members were surveyed. 19/20 (95%) agreed that Febrile Neutropenia was a medical emergency. 17/20 (85%) correctly identified the target of Time To Antibiotics (TTA) as <60 minutes. Respondents identified workload and lab turnaround times as factors adversely affecting the TTA.

Conclusion A TTA of <60 minutes can be difficult to achieve. These results suggest an opportunity to improve the timeliness of clinical assessment and peripheral culture. The views of nursing staff and parents would provide further insight.

This study is limited by the small sample size and lack of standard data recording – specifically related to timing of task completion.

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