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.

REFERENCE

1. Kwan, et al. Newborn screening for severe combined immunodeficiency in 11 screening programs in the United States. *JAMA*, 2014;312:729

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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10.1136/archdischild-2019-epa.723

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 BAH, KSA (EPIDEMIOLOGICAL AND CLINICAL OBSERVATIONS IN 209 CASES)

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10.1136/archdischild-2019-epa.724

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.