A pre and post session confidence questionnaire was provided, and participants were asked to share additional comments.

**Results** 15 nurses and 25 paediatric doctors were trained in using the pigtail chest drain. 100% of participants reported feeling more confident with this technique following the training. One registrar has since successfully inserted a pigtail chest drain for a neonate with a large pneumothorax.

5 nurses and 20 paediatric doctors were trained in using the Midline, with all participants feeling more confident with this technique following the training. Four midlines have been successfully inserted into patients requiring prolonged antibiotic regime following these sessions. Three midlines lasted their intended time length, with no complications, and meant patients did not have to return to hospital for repeat vascular access. One midline was dislodged in the context of multiple blood sampling.

**Conclusions** Following its success we intend on ingraining these sessions within the trainee-teaching curriculum. For clinicians wanting to utilise their skill on real patients, the consultants will supervise this, as required. All procedures will be logged, so they can be audited for quality control. We recommend all paediatric DGH settings incorporate these skills into their units to enable safer and better patient care, and trainee skill-set. However, we recognise the variability in available expertise in all units to undertake training.

### British Society for Paediatric Dermatology

**Abstracts**

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### British Society for Rheumatology

**MACROPHAGE ACTIVATION SYNDROME AND SEPSIS**

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**Background** Sepsis is a state of systemic inflammation due to an infectious etiology leading to multisystem dysfunction and death in severe cases. The morbidity and mortality rises further due to an underlying immuno-modulatory process presenting as MAS (Macrophage Activation Syndrome) than accompanies the state of sepsis.

**Objectives** To describe a case series of three infants with hyperferritinemia and MAS being successfully treated with less immunosuppressive and cytotoxic methylprednisolone and IVIg therapies.

**Methods** Three children presenting with clinical symptoms and signs of sepsis being treated with antibiotics but not responding to the conventional treatment were screened for the biomarkers of inflammation and satisfied the criteria for Macrophage Activation Syndrome and thus treated with immuno-modulatory therapy. This resulted in a satisfactory outcome.

**Results** The patients were treated with immunomodulatory therapy with IVIg and methylprednisolone. (One of our cases presented in the neonatal period and we avoided methylprednisolone in the patient weighing risks and benefits). Such immune-modulation slows down the inflammatory storm by reducing cytokines and providing pathogen specific antibodies. These modalities of treatment have been shown to be less immunosuppressive and less cytotoxic in patients with hyperferritinemia and MAS (Macrophage Activation Syndrome) than the chemotherapeutic drugs used in HLH (Hemophagocytic Lymphohistiocytosis). The use of these modalities in these cases led to successful outcome in terms of survival of these children presenting as MAS with sepsis.

**Conclusions** In setting of sepsis, MAS should be suspected if clinical condition is not responding despite appropriate management or laboratory parameters show progressive thrombocytopenia and transaminitis. Screening for MAS can be easily done by serum investigations like ferritin, fibrinogen, triglycerides, platelet count and liver enzymes. The timely administration of IVIg and methylprednisolone in these children reverses the inflammatory state and prevents irreversible organ damage. Thus addition of these immunomodulatory therapies in addition to antibiotics and supportive care improves the patient outcomes.