Management of the child with a non-blanching rash

Children commonly present with a non blanching rash +/- fever. The important diagnosis to exclude in these patients is meningococcal disease. However, most (>90%) of these children who are well with the rash will have viral infections that require no treatment. They have long presented a diagnostic dilemma to paediatricians.

Diagnosis

There are a group of conditions which present with a non blanching rash, but have specific features which will identify them easily:

- Henoch Schonlein purpura (HSP)
- Idiopathic thrombocytopenia (ITP)
- Acute leukaemia
- Haemolytic uraemic syndrome (HUS)

They have other specific signs or symptoms:

**HSP**
Usually a classical distribution of purpura, bruising and urticaria on the buttocks and extensor surfaces of the limbs, sometimes associated with joint or abdominal pain

**ITP**
Usually well children with multiple bruises and petechiae noted over several days

**Acute Leukaemia**
Symptoms of slower onset associated with anaemia, lymphadenopathy or hepatosplenomegaly

**HUS**
Oliguria/anuria associated with anaemia, usually following a diarrhoeal illness

Once the above conditions are ruled out clinically, (see individual guidelines for assessment and management), we are left with a differential diagnosis as follows:

- Meningococcal disease (MCD)
- Sepsis with other bacteria (uncommon)
- Viral illnesses
- Trauma/NAI
- Mechanical e.g. due to raised intrathoracic pressure from coughing or vomiting in superior vena caval distribution (above nipple line).

Evidence is based on retrospective and prospective observational studies, specific points include:

- It is highly unlikely significant bacteraemia is present if the rash is localised to a superior vena-caval distribution.
- No single factor, i.e. fbc, CRP can rule out significant bacterial illness on its own.
- Observation of 4 hours is recommended in the majority of cases where diagnosis is uncertain.
- The presence of purpura make meningococcal disease more likely. (Petechiae are pinpoint non-blanching spots. Purpura are larger non-blanching spots (>2mm).
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Use the following algorithm to help discriminate who needs admission and IV antibiotics and who can be discharged. If in doubt TREAT AS MENINGOCOCCAL SEPSIS.

**Non Blanching Rash Algorithm**

Prior administration of penicillin does not alter the algorithm

1. **NON BLANCHING RASH+ FEVER**
   - **PURPURA?** (≥2mm)
     - **YES**
       - ADMIT AND TREAT AS MENINGOCOCCAL SEPSIS
     - **NO**
       - **UNWELL?**
         - Irritable
         - Lethargic
         - Low cap refill (>2secs)
         - And/or hypotensive meningism
   - **YES**
     - DISCHARGE IF NO OTHER CONCERNS (UNDERLYING CONDITION TREATED)
   - **NO**
     - **MECENICAL EXPLANATION?**
       - SVC distribution after cough/vomit or local trauma
     - **YES**
       - OBSERVE MAU FOR 4 HOURS
     - **NO**
       - **RASH SPREADING?**
         - **YES**
           - CHECK FBC, COAG, CRP.
           - If enough blood available
           - BLOOD FOR BLOOD CULTURE (MENINGOCOCCAL PCR, collect but do not send unless CRP/FBC deranged
         - **NO**
           - **OBSERVE MAU FOR 4 HOURS**
           - IF REMAINS WELL, NO SPREAD OF RASH AND BLOODS SATISFACTORY
           - SENIOR REVUE BEFORE HOME.

**References**

Purpura

Petechiae