- Pseudochromhidrosis is the result of colourless perspiration that acquires colour when it reaches the skin and comes into contact with an external chromogen such as chromogenic bacteria (for example *Corynebacterium* species), fungi or dye from clothing.
- Pseudochromhidrosis can present with a variety of colours depending on the aetiology. Involvement of the face, palms, or neck is most frequently reported, although it can present anywhere on the body.

Case

- A fifteen year old boy with no significant past medical history was referred to CAU with three weeks of developing blue/grey patches intermittently on his skin.
- These episodes occurred daily with differing distributions, not coinciding with a particular time of day, nor a particular activity level.
- Examination revealed blue/grey patches on the patient's hands and elbows bilaterally.
- Thorough examinations, observations and haematological/biochemical investigations to identify a cause of presumed cyanosis were all normal.
- Bacterial and fungal cultures of the skin were negative.
- The affected areas were wiped with a damp cloth – there was evidence of blue/grey staining on the cloth following this.
- Given the patient was systemically well, the transient nature of episodes and being able to wipe the coloured fluid from the skin, a preliminary diagnosis of pseudochromhidrosis was made.
- Formal diagnosis has been challenging as the patient is reluctant to undergo further investigations, including skin biopsies. In the interim, he is using antiseptic skin scrubs to help control episodes.

Learning points

- There are no known causes or associations for (pseudo) chromhidrosis.
- Diagnosis of chromhidrosis is made through identifying lipofuscin granules in a skin biopsy. Pseudochromhidrosis is a clinical diagnosis based on exclusion of chromhidrosis.
- Evidence regarding optimal therapy is limited. Satisfactory management remains challenging.
- The prognosis is good if the extrinsic cause is identified and the inciting factor (such as chromogenic bacteria) is eliminated.
- Systemic and topical antibiotics, as well as topical antiseptic scrubs, are the mainstay of treatment for pseudochromhidrosis.
- There are no known medical sequelae other than social embarrassment and psychological stress.

G345(P) IDENTIFYING CHILDREN AT RISK OF SERIOUS BACTERIAL INFECTION IN THE EMERGENCY DEPARTMENT: RISK SCORES AND GUT FEELING

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10.1136/archdischild-2018-rcpch.335

Aims To assess the utility of a validated clinical risk score (Brent *et al.* 2012) to stratify febrile children presenting to the emergency department, as high or low risk of serious bacterial infection (SBI). To further assess clinician's gut feeling in identifying those children with SBI.

Methods A prospective cohort study of children aged <17 years presenting to a children's emergency department, with an actual or reported temperature >37.5°C and requiring blood tests as part of their medical management, were recruited between February 2014–January 2017. For each participant the validated clinical risk score was completed using triage and clinician documentation. Clinician's 'Gut feeling' was recorded prior to results review and management plan formation. SBI was defined according to criteria described by the original validation study. Final diagnoses were assigned as definite/probable bacterial or viral infection or indeterminate.

Results 200 children were recruited, 9 subsequently excluded, leaving 191 (median age 2.1 years (IQR 0.9–4.2) for analysis. 164 (85%) participants had scores ≤5 suggesting low risk of SBI. Of these 46/164 (29%) had SBI. 8 participants had high risk scores >8 suggestive of an SBI and of these only 4/8 (50%) had an SBI. Where clinician's gut feeling was recorded as 'No SBI', 49% (34/69) of children had a bacterial infection. Where clinician's gut feeling was recorded as 'not sure/possibly' for SBI, 21% (22/104) had bacterial infection. Analysis of blood markers revealed total WCC and neutrophil count were not useful discriminators of SBI (AUC WCC 0.6, neutrophils AUC 0.7.) CRP was significantly higher in the groups definite and probable bacterial infection [(AUC CRP 0.86 (p<0.0001)].

Conclusions The validated clinical risk score for SBI did not effectively 'rule out' or 'rule in' serious bacterial infection in this cohort. Clinician's gut feeling was not helpful in identifying definite bacterial or probable bacterial infection. As anticipated CRP was a useful indicator of bacterial infection but has limitations as it is used as part of the categorisation of serious bacterial infection.

G346(P) DRIVING UP STANDARDS AND MINIMISING RISK: RELIEVING THE BURDEN OF JAUNDICE MANAGEMENT IN THE EMERGENCY DEPARTMENT (ED)

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10.1136/archdischild-2018-rcpch.336

Background and aims Jaundice represents a significant burden on ED workload. Long waiting times for assessment and investigation can lead to delays in treatment and discharge.

Method The team used audit and DATIX reports to assess care of babies presenting to ED with jaundice. Quality improvement initiatives were implemented based upon results, and a reaudit assessed their impact.

Results A total of 272 cases presenting in the year 2016 were analysed. Areas for improvement were found to be; time to serum bilirubin result (mean 168 min, range 28–508 min) and time spent in department (mean 245 min, range 37–716). Causes of delay included prolonged waits for medical assessment and laboratory delays in sample analysis. The DATIX system identified key cases where patient care was deemed to fall short of expected standards. Serious incident (SI) reporting identified cases where harm may have arisen.

Conclusion and recommendations Using our data and incorporating DATIX and SI reporting, we secured financial and managerial investment to implement our recommendations. Our primary intervention was the creation of an in-hours nurse-led jaundice clinic. This alternative pathway is intended to relieve burden in ED and facilitate access to faster assessment and treatment. For patients presenting out of hours, we improved point of care testing by obtaining a transcutaneous bilirubinometer and recalibrating the blood gas analyser to improve accuracy thus removing the need for processing lab serum samples. Education targeted at triage nurses in ED has enabled them to initiate basic investigations and management whilst awaiting medical assessment. Going forward, we have also been able to secure an application for a Biliblanket which will aid the timely administration of phototherapy in ED.

A re-audit of three months of data following implementation of these initiatives has shown a 56% reduction in mean waiting time for bilirubin results and 49% reduction in mean time spent in ED.

This project highlighted the benefit of a multifaceted approach to quality improvement, incorporating multiple pillars of clinical governance to advance patient care.

G347(P) IMPLEMENTING CLINICAL PATHWAYS IN A PAEDIATRIC EMERGENCY DEPARTMENT

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10.1136/archdischild-2018-rcpch.337

Background Despite the fact that evidence based guidelines are widely available adherences to them remains unsatisfactory.¹ Embedding guidance and decision support into clinical work processes at the bedside might improve this.

Aim We turned eight existing clinical guidelines into 'clinical pathways' embedded in paediatric Emergency Department (ED) workflow, which obviates the need to learn or look up a guideline, and gives clinical decision support at the bedside. We hypothesise that this would improve guideline compliance and reduce unwarranted clinical variation.

Methods Clinical pathways were created for the most common and/or important presentations to paediatric ED, namely 'The Wheezy Child under 5 years of age', 'Diarrhoea and Vomiting under 5', 'Child with Stridor', 'Febrile convulsion', 'Asthma in over 5's', 'The Child with a limp', 'Non-blanching rash', 'The child with fever and cough'. Activation of the pathway is symptom- rather than disease-based, and the pathway forms part of the ED clinical notes. The pathway guides clinician decision making, from treatment and investigations options (including reminders of unnecessary or non-evidence-based interventions); criteria for discharge, referral and admission; and patient information.

Results Pathways were well received and comprehensively implemented. At time of writing, clinical outcomes are available for four of the pathways. Results include reduction of the inappropriate use of nebulisers from 75% to 25%, reduced reattendances from 29% to 0%; more appropriate use of prednisolone and reduced requests for chest x-rays (for wheeze); increased urine sampling from 28% to 52% and more appropriate admissions and halved reattendance rates for diarrhoea and vomiting; reduced reattendances from 22% to

0% for stridor; reduced admission rate from 75% to 40% for febrile convulsion.

Conclusion The creation of clinical pathways, embedding existing clinical guidelines into routine care processes, have improved guideline adherence, improved clinical outcomes and reduced clinical variation.

REFERENCE

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G348(P) USE OF THE 'STEP-BY-STEP' APPROACH IN IDENTIFYING LOW RISK FEBRILE INFANTS IN THE EMERGENCY DEPARTMENT

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10.1136/archdischild-2018-rcpch.338

Aims The European 'Step-by-Step' algorithm (Gomez et al) has been shown to be superior in the management of febrile infants compared with the Rochester and Lab-Score criteria, especially identifying low risk patients.

If we applied the 'Step-by-Step' algorithm retrospectively to an audit could we identify areas to improve our capability and confidence of recognising low risk patients, including the use Procalcitonin (PCT).

Methods An audit over 6 months from November 2016 to April 2017 at Evelina Children's Hospital Paediatric Emergency Department recorded the investigation and management of all infants aged 1-3 months who had a fever recorded at triage or a history of fever recorded in nursing triage.

We excluded patients less than 4 weeks old as fever in the neonatal period is treated as high risk.

Results Sixteen infants aged 1-3 months presented with a fever (only two with a fever >24 hours), thirteen were admitted and given intravenous antibiotics, the average length of admission was twenty-eight hours. Only one had a CRP >20, two had leukocyturia and none had a raised WCC or neutrophil count.

Forty-two infants aged 1-3 months were triaged with a history of fever, nineteen were admitted for intravenous antibiotics, the average length of admission was fifteen hours. Two had a rise in CRP, three showed leukocyturia and two showed raised neutrophils.

No cases of isolated bacterial pathogen in blood or CSF were identified in either group.

Using the 'Step-by-Step' approach seven (54%) with fever and six (32%) with a history of fever who were admitted and treated could be identified as low risk. The most reliable identification for high risk is clinical appearance.

Conclusion The 'Step-by-Step' approach is a valuable and a more applicable tool than previous methods in the management of febrile infants. This approach shows we can improve our method of identification of low risk patients in infants aged 1-3 months that present with fever, possibly reducing admissions. PCT could also be a further useful step in identifying low risk patients.

REFERENCE

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