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IS THERE ANY ROLE FOR CLINICAL SCORING SYSTEM ALONGSIDE ULTRASOUND (US) IMAGING FOR REDUCING THE RATE OF NEGATIVE APPENDICECTOMY (NA)?

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Aim of the study: Paediatric appendicitis can have a high incidence of misdiagnosis in non-specialist paediatric centres. The Alvarado score (AS) is among the most validated clinical prediction rules for the diagnosis of appendicitis. Primary aim of the study was to demonstrate to our regional network that a pathway involving a clinical score system & US-scan (AS+US) can maintain an acceptable NA rate without using CT-scan. A secondary aim was to identify patients where US can assist the management pathway.

Methodology: A prospective study on patients <16yrs suspected of having appendicitis over a period of 18 months was conducted. Modified AS were calculated by a middle grade surgeon in a&e and US performed within 12 hrs. Patients operated without US, were excluded. Operating surgeon was blinded to the scoring & patients followed a standard pathway (observation, appendicectomy or discharge). Four-week follow up took place on all patients.

Results: 119 consecutive patients were enrolled. Median age 10 years. 52 underwent appendicectomy.67 were observed & discharged with none re-admitted within the study period. Positive and negative predictive values of AS+US vs clinical expert judgement in diagnosing appendicitis were 73.3% vs 100% and 89.1% vs 90.5% respectively. The sensitivity of modified-AS (accounting for CRP values) in predicting diagnostic US was 97%. AS+US had higher positive predictive value in patients with symptoms onset longer than 48hrs (100% vs 69.2%), negative predictive value 92.3% vs 84%. NAR for the study period was 13.4%.

Conclusions: Clinical prediction rules can be improved by implementing crp & US but they don't reach benchmark performance unless performed more then 48 hrs after symptoms onset. Modified AS in our study demonstrated high sensitivity in predicting a diagnostic US. We suggest that senior review currently remains the most effective tool for reducing NAR without the morbidity of radiation such as CT .