

Re-audit of CT KUB Imaging at ULHT: Evaluating Request Justification, Repeat Scan Intervals, and Reporting Standards

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Abstract Text: Acute renal colic is a common urological emergency requiring timely diagnosis to reduce complications including obstruction and infection and to plan management. Low-dose non-contrast CT KUB is recommended for adults with suspected renal colic, while pregnancy and paediatric presentations require alternative pathways. NICE recommends urgent low-dose non-contrast CT within 24 hours for adults with suspected renal colic, and the RCR standards highlight the need to avoid CT KUB for non-specific abdominal pain and inappropriate repeat examinations. This re-audit assessed ULHT CT KUB practice against ULHT renal colic guidance v5.1, NICE NG118 and RCR standards. Indicators included adequacy of clinical details, low-dose CT use where BMI <30, diagnostic yield for calculi, alternative diagnoses, reporting of stone level, size in two dimensions and density, and appropriacy of repeat scans within three months. Targets were 100% for request adequacy, low-dose imaging, reporting standards and appropriate repeat imaging. ≥44% for calculi detection, and ≥6% for alternative diagnoses. #A retrospective re-audit was performed of CT KUB examinations undertaken across ULHT sites between 01/08/2024 and 31/01/2025 for suspected renal stones. Patients under 18 years and pregnant women were excluded. From 3,387 eligible studies, systematic sampling of every ninth case produced a final set of 376 scans. Requests and reports were reviewed for adequate clinical details, diagnostic outcome, reporting quality, BMI/weight documentation (ULHT uses 'smart scanners' which automatically apply appropriate radiation using built in scales so this was not required) and repeat CT KUB appropriateness within three months. #The first cycle demonstrated suboptimal performance, including appropriate requests in 30%, calculi detection in 32%, alternative diagnoses in 44%, stone level reporting in 87%, two-dimensional stone measurement in 8%, density reporting in 3%, and appropriate repeat CT in 81% of cases. The first action plan was to present findings to radiology stakeholders, focusing on vetting and actionable CT KUB reporting; update vetting criteria; share results with urology and emergency departments; educate referrers on concise relevant clinical details and radiation risk; and improve clinician access to previous imaging requests through improved system access/ integration. #In the second cycle, appropriate requests improved to 84%, calculi detection to 34%, stone level reporting to 93%, two-dimensional measurement to 11%, density reporting to 5%, and appropriate repeat CT to 87%. Alternative diagnoses reduced to 16%, within the expected RCR range. Performance across sites was broadly comparable. The second action plan is to share findings with radiology, reinforce RCR reporting standards, educate emergency and urology referrers on NICE/RCR CT KUB criteria, and provide department-specific feedback on common alternative diagnoses to support more targeted differential diagnosis before CT KUB referral. #This re-audit demonstrated improvements in request quality and modest improvement in repeat scan appropriateness and stone-level reporting. However, stone detection remained below the RCR benchmark, suggesting ongoing overuse in low-yield presentations. Reporting of stone size and density remains poor, limiting clinical utility for the urology departments. Further multidisciplinary education, improved vetting, standardised reporting and access to prior imaging are required to optimise CT KUB use and reduce unnecessary radiation exposure. "