The use of ultrasound and MRCP for the assessment of biliary tree pathology. Repeat audit of service

Dr Namratha Pandalai, Dr Amdad Ahmed and Dr Luke McElhinney Radiology Department, Hereford County Hospital, Wye Valley NHS Trust

Background
Pathway for assessment of gallstones and biliary tree pathology established at Hereford County Hospital, Wye Valley NHS Trust. Established post audit of USS and MRCP use at WVT (2011 – 2014)
Due to increase in demand and Inappropriate referrals and requests for MRCP. Re-audit of findings against standards outlined in previous audit

Previous audit aim
Primary assessment , Target = 100%, Imaging within 6 months, Sensitivity >90%
MRCP: indications for USS indeterminate / USS negative / Clinical concern for gallstones, Second line for biliary tree stones, Referrals only by gastroenterologists / general surgeons and for referrals by GP’s post USS

Summary
85.3% had preceding USS (up from 75.6%) Of those, who had MCRP only (14.7%) there was a clear indication
22 patients had MRCP instead of ultrasound. These referrals were for biliary tree stones and hence meet evidence based criteria. Audit standard met.
10 gallstones were missed on ultrasound. Sensitivity of ultrasound for GB stones is 92% (previously 95%). Standard met.
Referrals made by agreed groups of clinical practitioners. Standard met.
124 MRCP referrals in 3 years. 150 MRCP referrals in 6 months. Equates to 365% increase in MRCP referrals.

Discussion
22 patients had MRCP instead of ultrasound. These referrals were for biliary tree stones and hence meet evidence based criteria. Audit standard met. 10 gallstones were missed on ultrasound. Sensitivity of ultrasound for GB stones is 92% (previously 95%). Standard met. Referrals made by agreed groups of clinical practitioners. Standard met. 124 MRCP referrals in 3 years. 150 MRCP referrals in 6 months. Equates to 365% increase in MRCP referrals.

Key Findings of first audit
755 patients were audited between June 2011 and Dec 2014, Inappropriate requests for MRCP as first line investigations Only 75.6% had a prior USS (target = 100%), Of the 24.4% inappropriate MRCP’s, 57% were normal
Recommendation: MRCP should only be requested in cases of suspected CBD stones / if normal USS and suspicion of CBD pathology Sensitivity for detecting gallstones with USS was 95.2%, Standard met: Sensitivity for detecting gallstones with USS = >90%

Re-audit standards
• USS is the first line test for gallstones
• USS sensitivity >90% for gallstones
• Referral for MRCP – should be made by gastroenterologists, general surgeons and GPs
• MRCP is first line for patients with cholecystectomy

All MRCP audited
In 6 month period between Sep 2015 to March 2016
Request forms checked to identify referrer
Reporting Information System (RIS) checked – USS performed prior to MRCP?
USS and MRCP reports analysed to compare findings

Results
150 MRCP performed
109 (72.7%) abnormal
69 gallstones
23 biliary tree stones
69 dilated ducts
41 normal (17.3 %)
76% USS <6 months prior to MRCP
24% USS >6 months prior to MRCP

128 USS performed
86 (67.2%) abnormal
59 gallstones
3 biliary tree stones
50 dilated ducts
42 (32.8%) normal

Proposal for future
Maintain current standards.
Feedback to Sonographers and have a discussion on methods to provide greater assistance.
Feedback to management on the increased number of scans being performed. This needs to be factored into plans to expand the Radiology Department to deal with demand.

References
Use of ultrasound and Magnetic resonance cholangiopancreatography (MRCP) for investigation of gallstones, an audit of practice at a district general hospital; Kay Por Yip, Amdad Ahmed, Jessica Powell, Simon Bramhall 2013Volume 70, Supplement 1, Page S17