## Audit of ultrasound detection of biliary dilatation in cases of abnormal MRCP

## Descriptor

An audit to compare the assessment for biliary dilatation on ultrasound performed prior to abnormal MRCP examinations.

## Background

Abdominal ultrasound is usually the first-line imaging investigation in evaluating the biliary tree, but is highly dependent on both operator and patient factors

Intra and extrahepatic biliary dilatation are the most sensitive and quantifiable method on ultrasound for indicating a biliary obstruction, but ultrasound has a relatively varied sensitivity (25-77%) for the visualisation of causes of biliary duct dilatation (e.g intra-ductal calculi).

MRCP has a very high sensitivity and specificity for determining causes of biliary obstruction and is routinely used as a safe non-invasive second-line imaging investigation in patients with a dilated extra-haptic biliary duct on ultrasound.

## The Cycle

### The Standard

Where MRCP demonstrates common bile duct dilatation, ultrasonography performed prior to the MRCP should identify a dilated extra-hepatic biliary tree in 85-90% of cases5.

### Target

1. 85% or more accurate identification of MRCP detected biliary dilatation on preceding ultrasound

2. The ultrasound should contain a specific comment referring to either the presence or absence of intra and extra-hepatic biliary dilatation - 100%

3. If the cause of biliary dilatation is not shown on ultrasound, appropriate recommendation for further imaging (MRCP or CT) or referral should be included in the report– 100%

4. The gallbladder should be mentioned and the presence or absence of calculi stated (Target 100%- unless not visualised or had a prior cholecystectomy).

## Assess local practice

### Indicators

- The description of a dilated common bile duct in the ultrasound report

- The description of the gallbladder (unless not visualised or had a prior cholecystectomy)

- A clear recommendation for further imaging if no cause of biliary dilatation seen on ultrasound

### Data items to be collected

- Consecutive MRCP reports reporting significant intra and extra-hepatic biliary dilatation then identify how many had preceding ultrasound within a reasonable time frame (eg 4 weeks)

- A minimum of 50 ultrasounds should be evaluated with 100 cases or more the optimal target

- Review reports of abdominal ultrasounds performed within the agreed timeframe prior to abnormal MRCP and document findings related to biliary dilatation and gallbladder status

### Suggested number

50

## Suggestions for change if target not met

• Present the findings to the local ultrasound user groups

• Emphasise the importance of mentioning the diameter of the CBD and the presence of a dilated biliary tree on the report

• Emphasise especially the importance of stating appropriate recommendations for further imaging or referral if the cause of biliary dilatation is unclear on ultrasound

• Circulate results to individual users

## Resources

• With PACS collection of reports and review of images is greatly facilitated

• 5-10 hours to review reports and images if required

## References

1. Shanmugam et al. Is magnetic resonance cholangiopancreatography the new gold standard in biliary imaging? British Journal of Radiology Vol 78, 888-893 2005 http://bjr.birjournals.org/content/78/934/888.full
2. Attasaranya S. et al. Choledocholithiasis, Ascending Cholangitis, and Gallstone Pancreatitis. Med Clin N Am 92 (2008) 925–960 http://xa.yimg.com/kq/groups/23984489/2116843903/name/colangite.pdf
3. Bluth E. et al. Ultrasound: a practical approach to clinical problems. Ch.2 2nd Revised edition edition. 2008 Thieme
4. Yusuf T and Bhutani M. Endoscopic Ultrasonography and Bile Duct Stones. J Gastroenterol Hepatol 19(3):243-250,2004.
5. Kaltenthaler E et al. A systematic review and economic evaluation of magnetic resonance cholangiopancreatography compared with diagnostic endoscopic retrograde cholangiopancreatography. Health Technology Assessment 2004;Vol.8: No.10.
6. Clinical Audit in Radiology 100+ Recipes. Dr. S.Jones. Ultrasound scanning in obstructive jaundice. Recipe 108: 217-218.
7. Yarmenitis SD. Ultrasound of the gallbladder and the biliary tree. *Eur Radiol.*2002;12:270–282Fadahunsi OO, Ibitoye BO, Adisa AO, Alatise OI, Adetiloye VA, Idowu BM. Diagnostic accuracy of ultrasonography in adults with obstructive jaundice. J Ultrason. 2020;20(81):e100-e105.

## Editors Comments

If data is analysed with respect to individual operators this can be used for the purposes of revalidation.

## Submitted by

Samuel Stafrace, Janabel Galea. Updated by D Howlett, and J Parikh

## Co Authors

## Published Date

Monday 8 December 2008

## Last Reviewed

12 October 2023