EuroSciCon

2nd World Congress on

Surgery, Surgeons and Anesthesia

June 23-24, 2022
Webinar

Journal of Surgery
ISSN: 1584-9341

Pre-operative coagulation testing for patients undergoing elective laparoscopic cholecystectomy. What are the associated burdens?

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Background

Laparoscopic cholecystectomy is an elective intermediate surgical procedure, performed as an inpatient. According to the NICE guidance1, coagulation tests are only recommended for patients with ASA Grade 3 or 4, and with:

1) Chronic Liver Disease.

2) Or are taking anticoagulants and need modification of their treatment regimen.

Aim

This audit aims to identify the clinical and financial burden of coagulation testing pre- operatively in patients undergoing elective laparoscopic cholecystectomy, both of those advised by NICE guidelines, and those not.

Methods

A list of all patients undergoing an elective laparoscopic cholecystectomy, between May and June 2021, were obtained from theatre records, and blood test results were checked to determine if a coagulation screen tests were performed prior to surgery. A Liver profile was also looked at to identify any possible liver derangement, which may indicate abnormal clotting or hepatic obstruction 99 patients were identified.

Results

Phase 1:

A list of all patients undergoing an elective laparoscopic cholecystectomy, between 01/01/16 and 31/03/16, was obtained from theatre records, and blood test results were checked.

97 patients were identified.

Phase 2:

A list of all patients undergoing an elective laparoscopic cholecystectomy, between 01/05/21 and 31/06/21, at (Maidstone and Tunbridge Wells NHS Trust) was obtained from theatre records, and blood test results were checked data analyzed as below.

Phase 1 (before implementations)

Patients tested with a coagulation screen: N = 68 (70.1%)

2 patients were previously on anticoagulation: Chronic liver disease patients = 0 Deranged LFTs in patients = 5 LFTs not done =

2 Patients not tested with a coagulation screen:

N = 29 (29.9%)

2 patients were on previously anticoagulation .

Phase 2 (after implementations)

-Patients tested with a coagulation screen:

N = 2 (2.2%)

2 patients were not previously on anticoagulation or have deranged LFTs

-Patients not tested with a coagulation screen: N = 97 (97.8%)

1 patient was on previously anticoagulation (warfarin)

Chronic liver disease patients = 0

Deranged LFTs in patients = 4

LFTs not done = 5

The results from Phase 1 demonstrate a clear disparity between NICE guidance on point of care testing for coagulopathies and the reality of pre-assessment investigations, despite the relatively low risk of bleeding as a complication during the procedure, and VTE post-procedure.

Received: April 08, 2022 | **Accepted:** April 11, 2022 | **Published:** August 10, 2022

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The results from Phase 2 proved that the unnecessary using of coagulation screen for the patients undergoing elective laparoscopic cholecystectomy is remarkably improved.

Another point to consider is that of the financial cost of coagulation screens to the trust.

Having discussed these tests with the biochemical and hematology teams, the figure of

£6 was provided as a cost per test. If we extrapolate this to our data, we note that in Phase1, 66 patients were unnecessarily tested with coagulation screens, amounting to £396 over 3 months. This is just over £1500 per year for the trust.

However, after implementation of the changes we will notice in Phase 2 that only 2 patients were unnecessarily tested with coagulation screen amounting to £12 over 2 months which saved over £1400 per year for the trust.

Conclusion

Coagulation screening has a limited role in pre-operative screening for elective intermediate surgery. Although there are some benefits to coagulation screening, NICE recommends that routine screening only be performed in very few specific circumstances. The potential benefits of reducing the number of coagulation screens include reducing over- investigation, as well as minimalizing the financial cost of these tests.

Biography

Mohamed Hassan is a General and colorectal Speciality doctor at Maidstone and Tunbridge Wells NHS trust . He is a member and faculty of the royal college of surgeons of England. He trained in Egypt and he has MSc in General Surgery from Ain Shams University 2016.

Received: April 08, 2022 | **Accepted:** April 11, 2022 | **Published:** August 10, 2022