



Gastro-Intestinal Anaesthesia Safety Checklist Audit in improving patient care at a tertiary care cancer centre (CARE)



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Introduction

- Though a seemingly simple intervention, *checklist* has played a leading role in the most significant successes of the *patient safety* movement.
- Safety Checklists are increasingly being used as tools to improve care processes and outcomes by reducing patient harm and eliminating medical errors.
- This safety program was implemented at our tertiary care cancer hospital, as a part of multi-component quality improvement initiatives in patients undergoing major gastro-intestinal (GI) surgeries.

Aim

Implementation of the Checklist and monitoring the compliance with five safety measures would improve patient safety.

Methods

- A preoperative safety checklist consisting of five safety measures based on current available best evidence was introduced by our team of GI anaesthetists.
- We monitored compliance to five safety measures

1. Ultrasound use during insertion of central venous catheter

US guidance for the placement of CVCs is one of the patient safety practices with the strongest evidence^[1]

2. VTE prophylaxis (pharmacological and/or TEDs)

Strong evidence from numerous high-quality trials supports the use of VTE prophylaxis for cancer surgeries. (NICE guidelines)^[2]

3. Timing of LMWH and epidural insertion

In patients who are on LMWH, needle/catheter placement should be performed at least 12hours after the last prophylactic dose of heparin leading to decreased risk of hemorrhagic complications, including spinal hematomas and neurological dysfunction. (ASRA guidelines ref)^[3]

4. Preoperative carbohydrate drink in non-diabetics

Prolonged period of fasting may have adverse consequences such as dehydration, electrolyte imbalance, distress, confusion, hypoglycemia, postoperative nausea and vomiting (PONV). (ASA guidelines)^[4]

5. Allen's test prior to radial arterial line cannulation

Mod Allens test, a screening test for deficits in palmar collateral circulation. Test sensitivity and specificity were calculated to be 77% and 93%.^[5]

- Data was collected at two timepoints, baseline and five years after implementation of the Safety checklist by our research nurse.
- Baseline data collection (over one year) was followed up by continuous education of all resident anaesthetists at our hospital regarding the five safety measures.
- After five years, we reaudited and data which was collected (over one year) and compared to the baseline data.
- Proportion count was used to summarise the data of safety checklist parameters.

Results

Total 760 patients were included in the analysis in the baseline data in the year 2017 and 720 patients were included in 2022. The compliance to the five safety measures is mentioned in Table 1.

Table 1: Compliance to 5 safety parameters

Year	USG Guidance during CVC N(%)	VTE Prophylaxis is (%)	LMWH and Epidural insertion N(%)	Preoperative Carbohydrate Drink N(%)	Allen's Test N(%)
2017	79 (74%)	758(99.8%)	584(97%)	586(78%)	227(93%)
2022	18 (100%)	715(99.3%)	464(100%)	624(100%)	371(100%)

CRF

HPB SAFETY DATA			
Patient details			
CRF no:	Reg No:		
Age: yrs	Gender: Male	Female	
Surgery details			
Date of Surgery	/ /		
Surgery performed:			
Comorbidities if any (tick appropriate option)			
Hypertension	Diabetes	COPD	Others
Ischemic Heart disease	Asthma	Heart failure	
Safety parameters			
Check Timing of LMWH checked prior to epidural insertion	Yes	No	
Venous thromboembolism prophylaxis given by 8 pm the night before surgery	Yes	No	
Use of TED stockings	Yes	No	
Pneumatic compression device used	Yes	No	
Postoperative DVT prophylaxis prescribed	Yes	No	
If it's a 2nd case did the patient receive Drink either Water / Appy by 11 am	Yes	No	
Carbohydrate supplement / Water given 2-3 hrs prior to surgery	Yes	No	
Allen's test performed in both hands	Yes	No	
Rt: Insufficient/ OK	Lt: Insufficient/ OK		
Arterial line inserted: Yes / No Site: Radial / Dorsalis / Femoral Inserted by: JR2 / JR3 / SR / Consultant			
No of attempts by: Registrar_ Consultant_	Insertion: Planned / Intraoperative decision	Supervised by: SR / Consultant	
Complications if any			
Epidural inserted: Yes / No Site: Awake / Asleep			
No of attempts by: Registrar_ Consultant_	Supervised by: SR / Consultant		
Complications if any			
Central venous catheter inserted: Yes / No Insertion: Planned / Intraoperative decision			
Site: IJV / Subclavian / Femoral	Inserted by: JR2 / JR3 / SR / Consultant	Supervised by: SR / Consultant	
Technique: USG Guided / USG assisted / Landmark	No of attempts by: Registrar_ Consultant_		
Complications if any			

Conclusion

- The initial results achieved with implementation of the safety checklist in major GI surgeries are encouraging.
- Strict adherence to safety measures is possible, with regular teaching and awareness of safety measures in improving patient care.

References

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