The Use Of Pre-operative Blood Grouping And Saving In Appendicectomies

Dr M. Senbanjo, Dr S. Lort, Mr R. Patel, Russells Hall Hospital, Dudley, UK

Introduction

- Many hospitals require routine blood grouping and saving prior to emergency appendicectomies. Blood group and save tests are performed on patients who may need a RBC transfusion, therefore surgical patients account for a large proportion. Some trust policies stipulate the need for two samples from patients who have never had a red blood cell (RBC) transfusion.
- In clinical practice delays to operations have occurred due to incorrect/ insufficient blood samples, difficulty obtaining samples and blood laboratory processing times.
- NICE guidance[1] states that 'the need to do cross matching or a 'group and save' is dependent on the severity of surgery and the likelihood of blood loss'. Whilst the Royal College of Surgeons[2] suggest that guidance for the appropriate use of tests be jointly agreed between local clinical and laboratory teams.
- **Objective: To assess the necessity of preoperative blood grouping and saving before performing emergency appendicectomies based on the risk of red blood cell (RBC) transfusion.**

Methods

A computerised retrospective search of the hospital database using the relevant OPCS-4 codes for appendicectomies was performed over the period January 2012 to December 2014

Included codes: H011, H012, H013, H018, H019, H021, H022, H023, H028, H029.

Excluded codes: H024 (Incidental appendicectomy)

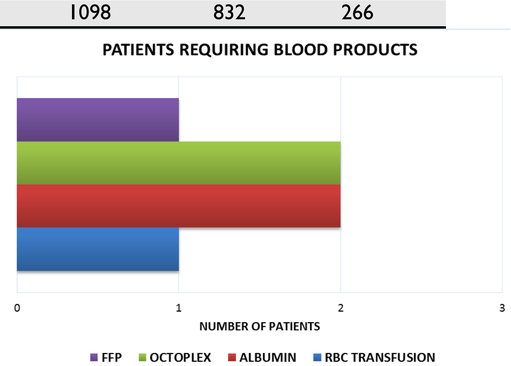
The data was then cross referenced against the hospital blood bank database to identify patients who received blood products postoperatively

Results

Procedure Code	Procedure	Number of Patients	Open	Laparotomy
H011	Emergency excision of abnormal appendix and drainage HFQ	54	52	2
H012	Emergency excision of abnormal appendix NEC	832	630	202
H013	Emergency excision of normal appendix	77	49	28
H018	Other specified emergency excision of appendix	1	1	0
H019	Unspecified emergency excision of appendix	5	4	1
H021	Interval appendicectomy	7	3	4
H022	Planned delayed appendicectomy NEC	6	3	3
H023	Prophylactic appendicectomy NEC	1	0	1
H028	Other specified other excision of appendix	1	1	0
H029	Unspecified other excision of appendix	114	89	25
Total		1098	832	266

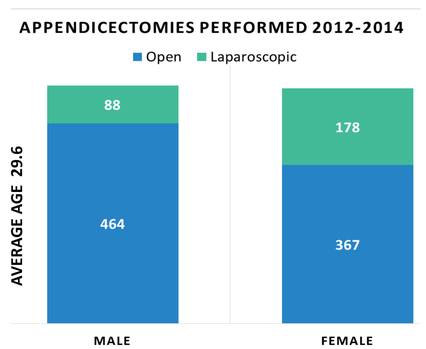
Blood Transfusion

- **Risk of RBC transfusion - 0.09%**
- Risk of RBC transfusion Open vs Laparoscopic (0.12% vs 0%)
- 1 Male vs 0 Female
- Average age: 41
- 9 units of RBC given to 1 patient



Blood Related Activity

- Risk of requiring blood products Open vs Laparoscopic (0.72% vs 0%)
- 4 Male vs 2 Female
- Average age: 45
- 5 units of Albumin given to 2 patients
- 9 units of Octoplex given to 2 patients
- 2 units of FFP given to 1 patient



Literature Review

- There is a very sparse amount of literature available in this area.
- A study at the Maimonides Medical Centre[3], New York found that only 1 in 726 patients (0.13%) undergoing an appendicectomy required RBC transfusion.
- Ghirardo, Silvio, Fabian et al[3] also suggest that the risk of transfusion is related to a pre-existing medical condition (anticoagulation treatment, preoperative anaemia) rather than the procedure.

Conclusion

- In this District General Hospital, the risk of requiring RBC blood transfusion when undergoing appendicectomy was extremely low (0.09%).
- Current local policy requiring all patients undergoing this operation to have routine preoperative blood grouping and saving requires amendment.
- Appendicectomies can be safely performed without delay in the administration of RBC transfusion should it be required.
- A change of policy will support efficient use of emergency operation theatres by reducing delays caused by incorrect/insufficient blood samples and also reduce fiscal expenditure on clinically unindicated tests.

References

1. NICE (2003) **Preoperative Tests: The use of routine preoperative tests for elective surgery.** http://www.nice.org.uk/guidance/cg3/evidence/cg3-preoperative-tests-full-guideline3
2. The Royal College of Surgeons England (2011) **Emergency Sugery: Standards for unscheduled care.** https://www.rcseng.ac.uk/publications/docs/emergency-surgery-standards-for-unscheduled-care
3. Ghirardo, S. F., Mohan, I., Gomensoro, A., & Chorost, M. I. (2010). Routine Preoperative Typing and Screening: A Safeguard or a Misuse of Resources.JSLS : Journal of the Society of Laparoendoscopic Surgeons, 14(3), 395–398.