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THE EFFICACY OF METHYLENE BLUE COMPARED TO AIR IN THE ASSESSMENT OF ANASTOMOTIC INTEGRITY, A RANDOMIZED CONTROLLED TRIAL.

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Abstract

Background: Anastomotic leak is the most dreaded postoperative complication following bowel surgery because it causes significant morbidity and mortality with resultant increase in duration of hospital stay and cost of care. Post operative anastomosis leakage was found to be associated with a mortality of 40%. Untested anastomoses had twice the rate of postoperative clinical leaks compared with those that were tested. The best method of intra operative testing remains inconclusive as different authors through retrospective studies got varying results of POL.

Rationale: Intra-operative identification and repair of defects significantly reduces the risk of clinically apparent post-operative leakage and its associated morbidity. Therefore choosing the best method of assessing anastomotic integrity is paramount and should be made basing on scientific knowledge.

Objective: This study intended to assess the efficacy of intra operative use of methylene blue compared to air in the assessment of anastomotic integrity.

Methods: Between January and April 2013, a randomized clinical trial was conducted among 86 patients that underwent bowel anastomosis. Using block randomization, two groups of patients with comparable characteristics were generated. 45patients had air and 41patients had methylene blue used for the assessment of the anastomosis intra-operatively. Patients were reviewed daily by the PI for signs and symptoms of anastomotic leak up to 14days post operation.

Results:

Fifty one patients (59.3%) were emergency cases while 35 patients (40.7%) were elective cases. Intraoperative 38(44.2%) showed a leak, 18(40%) in the air group and 20(48.8%) in the methylene group. This was not statistically significant (p value =0.414).

Overall post operative anastomotic leak was 10.7%. The air group had more POL 8(17.8%) compared to methylene blue 1(2.4%) and this was statistically significant (p value =0.02)

Post operative hospital stay was9.4days for the air group compared to 7.1days for methylene blue group. This is significantly longer (P-value for difference =0.007).

Conclusion

The use of methylene blue in the assessment of anastomotic integrity reduces the occurrence of post operative anastomotic leaks (p value < 0.02) and reduces duration of post operative hospital stay by 2days when compared to using air(p value <0.007).