

Morbidity, mortality and associated factors in patients with emergency laparotomy...

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Although laparotomy was the second widely available service (88 %) in Ethiopia and although there were few studies done on the general pattern of acute abdomen, there are no studies done on outcome of emergency laparotomy in the country so far. A total of 390 emergency laparotomies' were performed in one year from the beginning of September 2016 to the end of August 2017. Of the 390 operated cases, 320 (82.01%) charts of patients had adequate information to be included in the study for further analysis. One hundred ninety two (60%) were from outside of Addis Ababa and 128 (40%) were from Addis Ababa. This is the reverse of study done in Tikur Anbessa for acute abdomen where majority 153 (66%) came from Addis Ababa (A. A) and 78 (34%) were from outside A. A. [34] Peritonitis 145 (45.3%), small bowel obstruction 66 (20.6%) and large bowel obstruction 44 (13.8%) were the commonest three indications emergency laparotomy and Perforated appendicitis 79 (24.7%), viscous perforation 48 (15%) and perforated PUD 36 (11.3%) were the three commonest intraoperative diagnosis. In a study done in Gonder, Small bowel obstruction (43.4%), acute appendicitis (34.6%) and large bowel obstruction (11.5%) were the commonest three indications for nontraumatic emergency abdominal surgeries respectively. In Tikur Anbessa hospital, acute appendicitis 122 (52%), Intestinal obstruction 62 (26%) and PPUD 21 (9%) were the three commonest cause of acute abdomen. [23, 34] In our study appendicitis and PPUD the leading and third cause of emergency laparotomy respectively, which is similar to the study done in Tikur Anbessa. Viscous perforation is the second commonest diagnosis in our study, while intestinal obstruction was the second commonest diagnosis in Tikur Anbessa Hospital. This difference is

due to the fact that trauma as cause of emergency laparotomy was included and cause of intestinal obstruction was studied separately in our study.

Abdominal trauma (all types) is the third commonest indication 60(18. 75%) of emergency laparotomy. The leading causes of abdominal trauma in our study 40(12. 5%) were penetrating [Stab Abdominal Trauma 22(6. 9%), Bullet Abdominal trauma 18 (5. 6%)] and Blunt Abdominal trauma 20(6. 3%). This is comparable with the study done in South Africa which (85. 6%) were penetrating [stab wounds in (56. 8%) and gunshot in (28. 8%)], and (14. 4%) with blunt injuries. [30]. One hundred and five (33. 4%) of operated patients had one or more immediate postoperative complications. This is higher than the study in Gonder (26. 6%) and Tikur Anbessa (28%) which operated patients had early (in-hospital) postoperative complications. The three commonest immediate postoperative complications other than death were wound infection 42(13. 1%), sepsis 25(7. 8%) and pneumonia 21(6. 67%). This is similar with the study done in Tikur Anbessa. The presence of complication in post-operative was associated with increased mortality ($p=0.00$). [23, 34] In this one year study the mortality of patients treated with emergency laparotomy was 10. 94% which higher than the study done in Gonder (9. 3%), and lower than that of study done in Tikur Anbessa (14%) despite trauma included in our study. The mortality rate of research done by the American College of Surgeons in emergency laparotomy was 14% and thirty-day inpatient mortality of emergency laparotomy was 11% in UK. [10, 21, 23, 34] The fact that majority of our patients consist of appendicitis with relatively low mortality rate of 2. 9% has definitely underestimated the mortality rate. The mortality rate of 22. 8% for perforated viscous and

Perforate PUD, Gangrenous sigmoid volvulus, Mesenteric vascular occlusion accounts mortality rate of 11.4% of each. In this study the age of patient > 61 ($p=0.027$), presence of comorbid illness ($p=0.003$), vital sign at presentation (systolic <90mmhg and PR > 120, ($p=0.00$ and $p=0.037$ respectively), duration of operation > 181 minutes ($p=0.02$) and Admission to ICU ($p=0.041$) are strongly associated with the mortality rate. After adjusting for confounding variables, vital sign at presentation (systolic <90mmhg) (odds ratio [OR] = 13.91, $P=0.001$) and having complication post operatively (OR = 14.477, $P=0.00$) were independent predictors of 30-day mortality in emergency laparotomy. It is no coincidence that as people age, their mortality increases, presumably due to the development of medical co-morbidities and their inability to recover as well from insults such as emergency surgery. Deranged vital sign at presentation (systolic blood pressure <90mmhg and pulse rate > 120) shows that there is significant physiologic change result in increased mortality rate.

Conclusions and Recommendation

Emergency laparotomy carries a high rate of mortality, especially in those over the age of 60 years, and deranged vital sign at presentation, so more needs to be done to improve outcomes, particularly in this group. This could involve increasing acute surgical care manpower, early recognition of patients requiring emergency surgery, development of clear management protocols for such patients. Emergency laparotomy carries a high rate of mortality, 10.9% overall, increasing to 28% in those aged 61 years or older. Patients should be made aware of this when consented for

their operation and families should be counselled or informed appropriately. Patients presented with shock (systolic BP <90mmhg) early diagnosis, adequate preoperative resuscitation and proper post-operative care would help to reduce the observed high mortality. Patients who develop post op complication had high risk of mortality, so early diagnosis and treatment of complication should be done.