



Clinical Study of Geriatric Patients Admitted in Surgery Department of Assam Medical College And Hospital

Dr. Rocket Chandra Brahma	Associate Professor Department of Surgery, AMCH Dibrugarh, Pin-786002
Dr. Gunabhi Ram Das	Assistant Professor, Department of Surgery, AMCH, Dibrugarh
Dr. Ratnesh Kumar	Post Graduate Resident Department of Surgery, AMCH, Dibrugarh, Pin 786002.
Dr. Sandeep Mudi	Post Graduate Resident Department of Surgery AMCH, Dibrugarh, Pin 786002.

ABSTRACT

BACKGROUND: The risks of operating on elderly people are well known and emergency surgery often accentuates it. This study is an attempt to address the epidemiological characteristics of disease for geriatric people.

OBJECTIVE: To gather hospital based epidemiological data on geriatric admissions and management outcome.

MATERIALS AND METHODS: A prospective analytical hospital based study. All admitted geriatric patients in department of general surgery (n=390) over one year period were enrolled.

RESULTS: We found 3.2 fold increased risk with emergency surgery. 32.8% of patients presented as emergencies. 100% mortality observed with emergency surgery in age group ≥ 75 years. The overall mortality is 8.6%, with age group 60-74 years is 8.7%, males 11.9%.

CONCLUSION: As the age advances so is the mortality from emergency surgeries. Also probably we must not be overzealous to perform emergency surgeries without successful resuscitation and stabilisation.

KEYWORDS

geriatric, emergency surgeries, mortality.

Introduction:

India has acquired the label of "an ageing nation" with 8% of its population being elderly according to 2011 census. Henceforth current statistics are pointers towards a new set of medical, social, and economic problems that could arise if an initiative in that direction is not taken by program directors and policy formulators.

The risks of operating on elderly people are well known to surgeons and the challenge of obtaining optimum results in these patients will increase. Although old age alone may not necessarily be a risk factor (1,2), emergency surgery (1,3-5) and medical problems (2,6-8) in the elderly often put them in an increased risk category.

Our country is in a phase of demographic transition. As per 2011 census, the population of the elderly in India is 96.8 million as compared with 57 million in 1991 and 50 million in 1951 and it has been projected by the year 2050, the number of elderly people would rise to about 324 million. (9)

Over the last 20 years geriatric surgeries have increased owing to advances in anaesthetic care, better surgical techniques leading to improved morbidity and mortality following surgery [24-27]. With this background the present study is an attempt to gather the epidemiological characteristics of geriatric patient, their disease pattern and morbidity and mortality of surgical illnesses.

MATERIALS AND METHODS: SOURCE OF DATA

•Admitted patients in department of General surgery in AMCH, Dibrugarh.

METHODS OF COLLECTION OF DATA

•Data is collected by the investigators using the structured proforma and in-depth interview technique from patients and attendants. Confidentiality of the patient was maintained.

RESEARCH DESIGN AND APPROACH

•The research design adopted for this study was prospective, analytical and descriptive hospital based study.

TIME PERIOD

ONE YEAR (FEB.2015-JAN. 2016)

PLACE OF STUDY

Assam Medical College & Hospital, Dibrugarh.

SAMPLE SIZE: All admitted geriatric patients in department of general surgery(n=390).

SAMPLING CRITERIA

INCLUSION CRITERIA:-

Admitted patients with age ≥ 60 years who are willing to participate in the study.

EXCLUSION CRITERIA:-

Patients with either of the following:-

- Age <60 years

- Patients who did not complete their treatment in the hospital.
- Who were not willing to participate in this study.

DATA COLLECTION METHODOLOGY & ANALYSIS:

The geriatric patients attending AMCH with various surgical diseases were either received in emergency department or outpatient department and were admitted in the surgery department. The patients who needed surgical interventions after assessments were operated upon by well experienced faculties of department of surgery, AMCH.

Data was analysed using SPSS Software version 16.0. Frequencies were compared using Pearson's Chi square test. Continuous variables were compared using ANOVA. Pre-post comparisons were done using the t test.

Results:

We present here results of 390 consecutive admissions observed over a period of one year.

There were 344 admissions in age group 60-74 years while 46 admissions in age group of ≥75 years of which 159 were males and 185 females while 29 males and 17 females respectively among two groups (FIGURE 1).

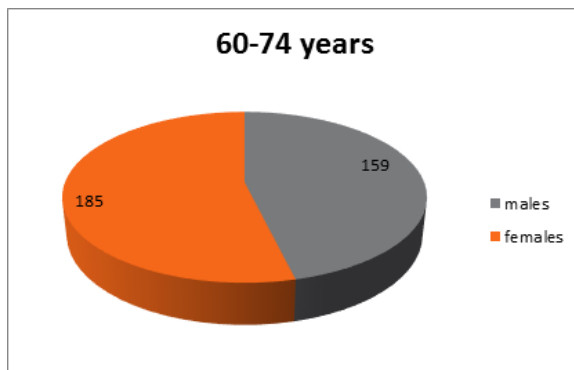


FIGURE 1.

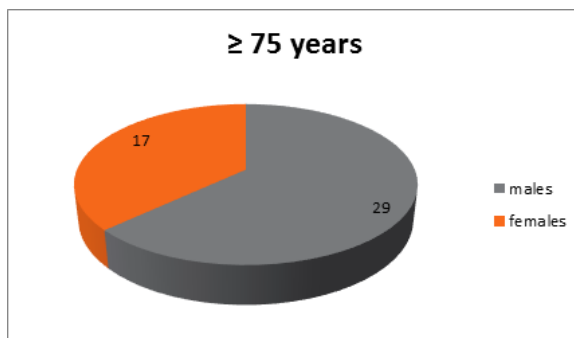


FIGURE 2

Portal of admission: There were 125 admissions through emergency department and the rest 265 were admitted as outpatient basis.

Disease Distribution:

Trauma:

For age group between 60-74 years, trauma accounted for 42(12%) of total admissions out of which 86% were head injuries and the rest 14% chest or skeletal injuries. Among the trauma victims (80%) are due to fall and the rest being due to road accidents or physical assault. In males 25 % of patients needed operative interventions while rest were managed conservatively. While 2 cases of blunt thoracic trauma underwent tube thoracostomy, 1 patient with femur neck fracture needed hip replacement. Interestingly all female patients were man-

aged conservatively.

Similarly in elderly geriatric group 2 patients one male and the other female with head injury as a result of fall were managed conservatively.

Hernia:

21(5.8%) patients were with hernia in geriatric age group 60-74 years out of which 16 were inguinal and 5 incisional hernias. Among inguinal hernia only 1 case was female rest 15(93.5%) were males and all underwent operative interventions (13 open hernioplasty and 2 laparoscopy hernioplasty). Among elderly geriatric above 75 years and above 4 patients (9.2%) reported with inguinal hernias all being males and were operated (open hernioplasty in 3 and herniorraphy in 1 patient)

Intestinal Obstruction:

9 patients (2.5%) had intestinal obstruction out of which 6 were males and 3 were females. All females were managed conservatively whose CT scan findings revealed Koch's abdomen and started on anti-tubercular drugs. However 4 males patients required emergency laparotomy out of which 2 had recto sigmoid growth which on HPE revealed adenocarcinoma and the other mucinous variant, 1patient had ileal adhesions with bands and 1patient had obstructed hernia.

While only 2 patients of elderly geriatric group was found to have pseudo-obstruction due to metabolic imbalance and uraemia and was managed conservatively.

Intestinal perforation:

17 patients with intestinal perforation were admitted with stomach perforations being 6, 4 were males and 2 were females , all required emergency laparotomy and were found to have prepyloric antral perforations and repaired primarily with abdominal drain. Patients were prescribed H. pylori regimen on discharge.

7 cases had duodenal perforations, with male preponderance (4 vs 3) underwent emergency laparotomy with modified Graham's patch repair with abdominal drain and were prescribed H.pylori eradication regimen.

4 patients had ileal perforations who too underwent emergency laparotomy with primary repair in 3 and in 1patient requiring resection anastomosis owing to gangrenous change. While in elderly geriatric population there was one each case of gastric, duodenal, ileal and sigmoid perforation which needed emergency laparotomy.

Intrabdominal abscess:

8 patients had intrabdominal abscess out of which 3 were males and 5 females. Out of which 3 had liver abscess and were drained percutaneously with pigtail catheter and 2 females has right paracolic gutter abscess which needed operative intervention. Rest of the 3 females had psoas abscess which was drained percutaneously with pigtail drainage catheter.

Among elderly geriatric population 1 was male who have to undergo laparotomy for inter bowel abscess evacuation, while 1 female patient with multiple pyogenic liver abscess which was managed conservatively with broad spectrum antibiotics.

Chronic Calculus Cholecystitis:

Among geriatric age group of 60-74 years there were 45 females and 8 males patients with chronic calculus cholecystitis out of which 29 male and 5 female patients underwent cholecystectomy (laparoscopic or open) and rest were managed conservatively. This constituted highest number (15.5%) of admissions in surgery department for a single disease and with largest number of interventions being performed. In elderly geriatrics 3 patients underwent cholecystectomy out of which 2 were males and 1 female.

Acute calculus Cholecystitis:

Out of 15 patients admitted, 12 were females and the rest 3 males. All were managed conservatively with broad spectrum antibiotics, analgesics, anti-secretory drugs and fluid support. Patient were discharged and planned for interval cholecystectomy after about 6 weeks.

Carcinoma:

About 91 (23.5%) patients with carcinoma (Table 3) of all types were admitted with only 12 patients belonging to elderly geriatric group and rest belonging to age group of 60-74 years.

TABLE -1

CARCINOMA	AGE GROUP 60-74 YEARS		AGE GROUP ≥75 YEARS		Total
	MALE	FEMALE	MALE	FEMALE	
Esophagus	5	4	1	0	10
Stomach	8	2	1	0	11
Gall Bladder	2	15	1	1	19
Cholangiocarcinoma	1	2	1	1	5
Peri-ampullary	1	2	1	0	4
Small Intestine	0	0	0	0	0
Colo Rectal	4	8	0	2	14
Anal	0	1	1	0	2
Melanoma	1	1	0	0	2
Renal	2	0	0	0	2
Prostate	1	0	0	0	1
Bladder	2	3	0	2	7
Penile	1	NA	0	NA	1
Breast	0	10	0	2	12
Hepatic	1	0	0	0	1
Total	29	48	6	8	91

Of the entire 10 carcinoma esophagus admitted 6 were unresectable and planned for chemo radiotherapy with feeding gastrostomy done. The rest of the patients (n=4) underwent for operative intervention.

Only 1 patient of carcinoma stomach underwent subtotal gastrectomy with Roux-en-Y gastrojejunostomy while rest 10 were advanced diseases were managed conservatively with cisplatin, 5-FU based chemotherapy regimen.

The highest patient load among carcinoma were found to be of gall bladder with maximum cases being females (n=16) out of which only 3 were operated while rest being advanced were managed conservatively with chemotherapy.

Among colorectal carcinoma group, 8 patients were operated out of 14 patients among which resection of growth with coloanal anastomosis was done in 2 patients, anterior perineal resection with colostomy was performed in the remaining (n=6) followed by chemotherapy.

Whipple's procedure followed by chemotherapy was done in 1 male case while 2 were managed conservatively with bilio-enteric bypass with chemotherapy.

Altogether 11 patients with urinary system cancers viz renal, prostate and bladder were admitted during the study period with maximum being of prostate (7) out of which only 2 underwent transurethral prostate resection (TURP) with chemotherapy and rest were referred to higher centres for intervention.

7 patients out of 12 admitted for breast cancer underwent combined modified radical mastectomy with chemotherapy while 5 presented with distant metastasis that were managed by chemotherapy alone. All cases with breast carcinoma were females.

Acute Appendicitis: A total of 10 admissions across all geriatric age groups were received out of which 8 patients were of age group 60-74 and the rest 2 ≥ 75 years age group. While most of the patients of 60-74 age group were females

and were managed conservatively, appendectomy was required in all patients ≥ 75 years age group.

Sigmoid Volvulus: Only 2 patients with sigmoid volvulus were received through emergency and were operated followed by uneventful recovery in one while the other female belonging to elderly geriatric group died of sepsis and pulmonary complications.

DISCUSSION:

This survey was specifically designed to examine characteristics of diseases and treatment outcome among operative and conservative groups in elderly patients. The definition of old age is variable and we have selected two age groups commencing at male retirement age (60-74) and 75 years and above..

Results of surgery in the elderly have improved (10-13). We have nevertheless shown a 3.2 fold increased risk with emergency surgery which is comparable to the usually quoted emergency to elective mortality ratios of 2.5-4.5:1 (1, 14-17). The mortality in emergency surgery group is 21.5% which is comparable with other studies (19-22). The benefits in terms of low mortality rates in elective surgery were noted in both our age groups. Hence an attempt should be made to correct the physiological variables by resuscitation and elective surgery should be encouraged whenever possible as evidenced by work of other authors (17, 18). 125 (32.8%) of our patients presented as emergencies, probably due to delay in seeking medical advice.

Most of the patients belonging to hernia, obstruction, perforation, intra-abdominal abscess, colorectal carcinoma, chronic calculus cholecystitis, sigmoid volvulus and mesenteric ischemia needed operative intervention among all geriatric age groups. There is evidence of operative risks increasing as the age advances in the present study by increased operative mortality in elderly geriatric population (100% mortality for emergency surgery in age group ≥75).

The overall mortality in our study is 34 patients (8.6%). The mortality in age group 60-74 years is 30 (8.7%) in males being 16 out of total 134 male admissions (11.9%) and in females being 14 out of 185 admissions (7.9%). The mortality in age group ≥75 is 4 (8.9%) slightly more in males than females (3 vs 1).

The highest mortality in our series was seen in patients with head injury which were being managed conservatively 6 died out of 18 (33.3%) on conservative management while all patients with operative intervention or all female patients on conservative management survived.

The group with second largest number of operative mortality was seen in emergency repair of duodenal or ileal perforations owing to sepsis and Multiple Organ Dysfunction Syndrome with pulmonary infections being major contributors. Among the 79.8% (27 out of 34) of death, the patients belonged to emergency department admissions.

CONCLUSION:

Improving outcomes in emergency surgery for the geriatric population has great clinical and health care system implications. As the age advances so is the mortality from emergency surgeries. At the same time we must not be overzealous to perform emergency surgeries without proper resuscitation and stabilisation of patient's physiological conditions. Evaluation of current practise is essential to light the path for future improved outcomes. Moreover elderly patients need to be treated with compassion whenever they attend the healthcare institutions and the doctors attending such patients must be sensitised towards the elderly patients both in terms of care and respect.

Though the Government have taken initiative in setting up of geriatric department in number of super specialty hospitals across the country under the National Program for Health

Care of the Elderly (NPHCE), still much needs to be done in this front.

Among the randomized control trials in emergency medicine journals [28], only 5 trials (3%) specifically examined patients older than 60 years. This emphasizes on future research in epidemiology of disease presentation, revision of emergency treatment algorithms and preoperative stabilisation of patients for better operative outcomes.

BIBLIOGRAPHY

1. Fowkes FGR, Lunn JN, Farrow SC, Robertson IB, Samuel P.(1982). Epidemiology in Anaesthesia III: mortality risk in patients with co-existing physical disease. *Br J Anaesth*;54:819-25.
2. Johnson JC. (1983).The medical evaluation and management of the elderly surgical patient. *J Am Geriatr Soc*;31:621-5.
3. Mohr DN. Estimation of surgical risk in the elderly-a correlative review. (1983).*J Am Geriatr Soc*;31 :99-102.
4. Marshall WH, Fahey PJ. Operative complications and mortality in patients over 80 years of age.(1964). *Arch Surg* 1964;88:896-904.
5. Seymour DG, Pringle R.(1983)Post operative complications in the elderly surgical patient. *Gerontology*;29:262-70.
6. Shipton EA.(1983) The perioperative care of the geriatric patient. *S Afr Med J* ;63:855-60.
7. Wachtel TJ.(1981). How to limit the risks of elective surgery. *Geriatrics* ;36:95-9.
8. Arkins R, Smessaert AA, Hicks RG.(1964) Mortality and morbidity in surgical patients with coronary artery disease. *JAMA* 1964; 190:485-8.
9. Age care statistics.[cited on 2007 Oct 6].Available from:<http://helpepageindia.com>.
10. Weiss FW, Lesnick GJ.(1980) Surgery in the elderly: attitudes and facts. *Mt Sinai J Med*;47:208-14.
11. Santos AL, Gelperin A.(1975) Surgical mortality in the elderly. *J Am Geriatr Soc*;23:42-6.
12. Lassen HK.(1962) Geriatric problems in surgery-a clinical review with a statistical survey of mortality rates as related to age. *BrJGeriatrPract*;1:167-79.
13. Palmberg S, Hirsjavi E.(1979). Mortality in geriatric surgery. *Gerontology* ;25: 103-12.
14. Robins RE, Budden MK.(1972). Major abdominal surgery in patients over 70 years of age: results during 1962 to 1966 compared with those during 1950 to 1959. *CanJSurg*;15:73-8.
15. Linn BS, Linn MW, Wallen M.(1982). Evaluation of results of surgical procedures in the elderly. *Ann Surg*;195:90-6.
16. Burnett W, McCaffreyJ.(1972). Surgical procedures in the elderly. *SurgGynecolObstet*;134:221-6.
17. Blake R, LynnJ.(1976). Emergency abdominal surgery in the aged. *Br J Surg*;63:956-60.
18. Seymour DG, Pringle R.(1982). Surgical emergencies in the elderly:can they be prevented? *Health Bull* ;41/3:112-31.
19. McIntyre R, Reinbach D, Cuschieri RJ.(1997).Emergency abdominal surgery in the elderly *J R CollSurgEdinb* 1997;42(3):173-8.
20. Walsh TH.(1996).Audit outcome of majorsurgery in the elderly. *Br J Surg*;83(1):92-7.
21. Reiss R, Deutsch AA.(1985). Emergency abdominal procedures in patients above 70. *JGerontol* 1985;40(2):154-8.
22. Akoh JA, Mathew AM, Chalmers JW, Finlayson A, Auld GD.(1994). Audit of majorgastrointestinal surgery in patients aged 80years or over. *J R CollSurgEdinb*; 39(4):208-13.
23. Desrosiers J, Vaillancourt R, Heppell J, LatourJ, Bourbeau D, Rheault M. (1989).[Geriatricdigestive surgery. An analysis of 163 cases.]*Union Med Can*;118(2):75-9.
24. Lee DH, Buth KJ, Martin BJ, Yip AM, Hirsch GM.(2010).Frail patients at increased risk for mortalityand prolonged institutional care after cardiac surgery. *Circulation*;121;973-8.
25. Rockwood K.(2005).What should make a definition of fraility successful? *Age Ageing*;34:432-4.
26. Cruz-JentoffAJ,BaeyensJP,Bauer JM.(2010),Sarcopenia:European consensus on definition and diagnosis in older people. *Age Ageing*;39:412-23
27. Martin FC, Brighton P.(2008).Fraility:different tools for different purpose. *Age Ageing*;37:129-31.
28. Jones CW, Hunold KM, IssacsCG, Platts-Mills TF.(2013). Randomized trials in emergency medicine journals,2008 to 2011. *Am J EmergMed* .;31(1):231-5.