Is The Mortality Of Patients Increased In Patients Admitted With Fractured Neck Of Femur, If There Is More Than A 24 Hour Delay Between Admission And Operative Treatment?

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Citation

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Abstract

Introduction- This study aims to review the current trends for mortality of patients with fractured neck of femur, concentrating on admission time, in comparison to 30 day mortality. Mortality has been associated with delay in operation to fix fractured NOF , and a delay of more than 24 hours between admission and operative fixation had been shown to be associated with increased mortality. The study will also look at the healthiest patients compared to the patient group as a whole to look at the trends in mortality.

Method- 286 patients were used in the study, which focuses on the patient group who received operative treatment. The patients who were operated on within 24 hours of admission, were compared with those who were operated on after 24 hours. The 30-day mortality of the two groups were compared. The healthiest patients were then reassessed in the same way.

Results- The results show that 36% of patients were operated on within 24 hours of admission. Overall, there was a 9.7% mortality in patients who were operated on within 24 hours, compared with a 13% mortality in patients who were operated on after 24-hours. In the healthier patients, there was an 11.6% mortality in patients operated on within 24 hours, compared with a 12.6% mortality in patients operated on after 24 hours.

Conclusion- The study agrees with the referenced material, that fractured NOF cases do better the sooner they receive operative treatment, where indicated. This is particularly the case for unwell patients as their mortality significantly increases after the first 24 hours after fracture.

Study conducted within Orthopaedic Department at Chesterfield Royal Hospital

INTRODUCTION

Fractured neck of femur (NOF) carries a significant mortality. 60000 people are treated for fractured NOF in England and Wales per year [1] , and as life expectancy increases in the population, fractured neck of femur admissions and mortality will continue to rise.

This is predominantly a problem of the elderly, and occasionally younger people with pathological fractures.

Mortality has been associated with delay in operation to fix fractured NOF, only in patients from their own homes, and a delay of more than 24 hours between admission and operative fixation had been shown to be associated with increased mortality.

AIM

Aim is to look at the mortality in 286 patients at 30 days post fractured neck of femur. Looking at the mortality for patients operated on within 24 hours of admission, and compare this to the mortality of the patients operated on after 24 hours of admission. I will then take into consideration the morbidity of each group of patients by scoring them on a health score of 1-7 depending on their co-morbidities.

CRITERIA

1. What percentage of patients admitted with fractured NOF are receiving operative treatment

where indicated within 24 hours of admission?

2. What percentage of patients operated on within 24 hours of admission have died within 30 days of admission?
3. What percentage of patients operated on 24 hours after admission or more, died within 30 days of admission?
4. What percentage of the morbidity score 0+1 patients (see method), who were operated on within 24 hours of admission died within 30 days of admission?
5. What percentage of morbidity score 0+1 patients, who were operated on 24 hours or more after admission, died within 30 days of admission?

METHOD

Aim is to look at the mortality at 30 days post fractured neck of femur. Look at the mortality for patients operated on within 24 hours of admission, and compare this to the mortality of the patients operated on after 24 hours of admission. I will then take into consideration the morbidity of each group of patients by scoring them on a score of 1-7 depending on their co-morbidities. This data is collected by the coding department at discharge so these co-morbidities may have developed post fracture fixation. I have scored each patient on the following system;

1. Dementia (ICD codes F00-F03, G30)
2. Diabetes (E10-E14)
3. Ischaemic Heart Disease (I20, I23-25)
4. Respiratory Disease (J40-J47)
5. Heart Failure (I50)
6. Renal Failure (N17-N19)
7. Hypertension (I10-I15)
8. Malignancy (any C code)

I will then reassess the results using the healthiest patients (who scored the lowest) to see if there is any difference in mortality depending on whether they received operative treatment within 24 hours of admission. This will be more accurate, as the more unwell patients are more likely to be delayed in receiving treatment as they were medically unfit for theatre, and so this may have skewed the results.

The exclusion criteria were patients who were managed conservatively, and patients who died before operation.

I have looked at 286 patients who were admitted to Chesterfield Royal Hospital, UK between April and December 2007.

The flaws in this study are;

Only looking at hospital held data for 30 days mortality. There may be a small percentage of patients who died within 30 days of operation after discharge who are not included in the figures.

The coding data that is sent to the audit department does not have any patient ID with the information. Therefore I could not check all the data was correct by cross-referencing case notes.

I can only take into account certain serious co-morbidities which I will score according to the 1-8 system above. To take into account all co-morbidities would be too time consuming, and may not affect results dramatically.

RESULTS

I can draw the following results from my data collection.

CRITERIA 1

What percentage of patients admitted with fractured NOF are receiving operative treatment where indicated within 24 hours of admission?

103 patients out of 287 patients admitted during this period were operated on within 24 hours of admission. 36%

CRITERIA 2

What percentage of patients operated on within 24 hours of admission have died within 30 days of admission?

10 patients out of 103 patients operated on within 24 hours, were dead at 30 days after admission. 9.7%

CRITERIA 3

What percentage of patients operated on 24 hours after admission or more, died within 30 days of admission?

24 patients out of 184 patients who were operated on later than 24 hours after admission, were dead at 30 days after

admission. 13.0%

CRITERIA 4

What percentage of the morbidity score 0+1 patients (see method), who were operated on within 24 hours of admission died within 30 days of admission?

8 out of 69 patients who were operated on within 24 hours of admission were dead at 30 days after admission. 11.6%

CRITERIA 5

What percentage of morbidity score 0+1 patients, who were operated on 24 hours or more after admission, died within 30 days of admission?

15 out of 119 patients operated on after 24 hours post-admission were dead at 30 days. 12.6%.

Figure 1

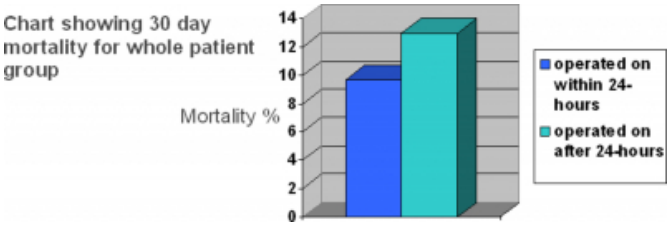
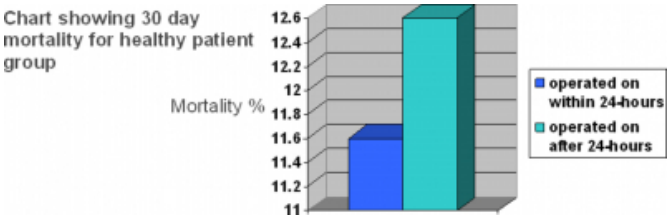


Figure 2



CONCLUSION

The data and charts conclude that there is an increase in mortality when patients are operated on after 24 hours post-admission. There is a 4% increase overall. When the data for the healthier patients who have less co-morbidities is looked at, there is still an increase in mortality although it is only about 1% and may not be significant.

At Chesterfield Royal Hospital 36% of patients are receiving operative treatment within 24 hours of admission.

The overall conclusion is that the sooner patients are taken to theatre for treatment of fractured neck of femur, the lower the 30 day mortality, and this is more so for the more unwell patients who have more co-morbidities.

References

1. BMJ vol 328, 8 may 2004

Author Information

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