

# **Mortality and Morbidity amongst patients with neck of femur fracture with Covid 19 when compared to those without - A case control study**

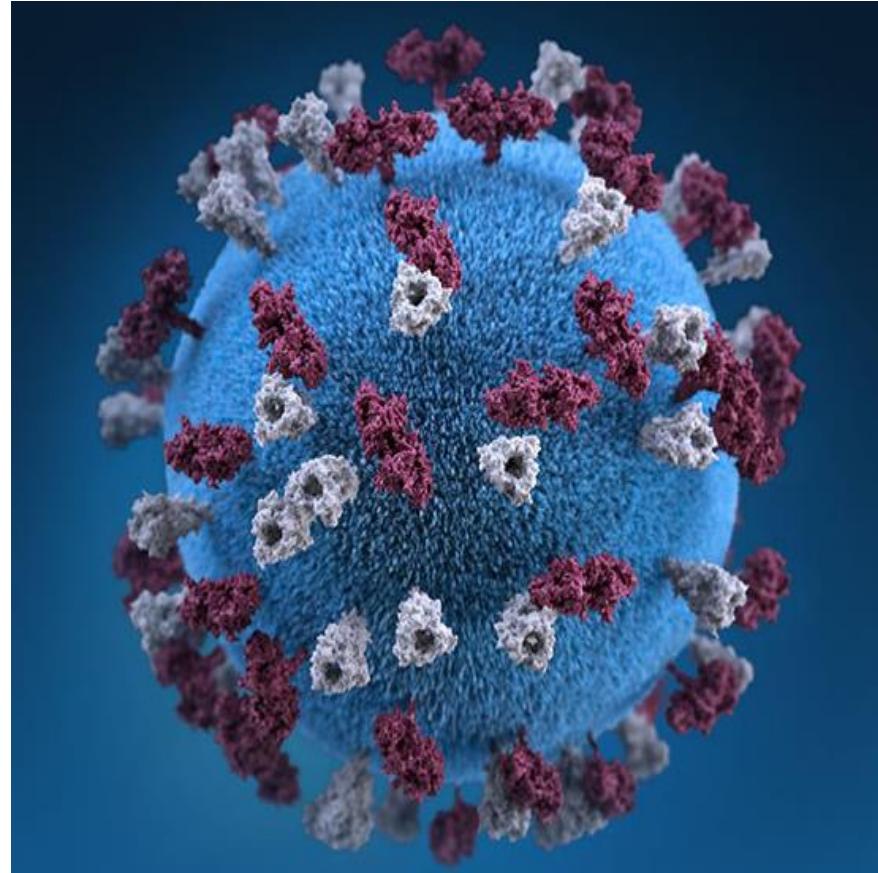
**Presenting Author:** Nuthan Jagadeesh

**Other Authors:** Debbie Shaw, Sachindra Kapadi,  
Venkatesh Deva, Deepak Channabasappa, Paul  
Siney



# Introduction

- COVID-19 pandemic has transformed orthopedic services with cessation of elective operation but hip fractures continue to present at a similar rate(1)
- 30 day Mortality rate of 6.5% was found in 2019 in whole of UK, slightly higher than the 6.1% recorded for 2018(2). Will it be same in 2020????
- There is limited data in literature relating to the effect of COVID-19 on the mortality and morbidity of patients with a hip fracture
- The aim of this study was to assess the impact of COVID-19 infection on the morbidity and mortality rates among NOFF patients when compared to those without.



1. Jenkins P. The Early Effect of COVID-19 on Trauma and Elective Orthopaedic Surgery. British Orthopaedic Association (BOA). 2020.

2. National hip fracture database annual report 2020 and 2019, RCP London [https://www.nhfd.co.uk/files/2020ReportFiles/NHFD\\_Annual\\_Report\\_2020.pdf](https://www.nhfd.co.uk/files/2020ReportFiles/NHFD_Annual_Report_2020.pdf)

# Methods

- Retrospective study between March to December 2020
- All patients with hip fractures admitted to Royal Albert Edward Infirmary included
- Covid Positive if laboratory/radiological/ clinical evidence suggestive of COVID-19 during admission or until 3 weeks post discharge
- Data collected and compared: ASA, Nottingham hip fracture score(NHFS), Charlton comorbidity index(CMI), complications, length of stay, 30-day, and 90-day mortality.



**Case group : NOFF  
with COVID-19**



**51 patients**

**Control group: NOFF  
without COVID-19**



**223 patients**

# Results

- No statistically significant difference between the group in terms of demographic variables, type of operation, CMI, NHFS, ASA( $p>0.05$ )
- The 30 day and 90day mortality among covid patients was 35.29% and 49.01% when compared to 10.72% and 21.97% in the control group( $p<0.001$ ).
- 33 out of 51 developed covid during the hospital stay.
- Length of hospital stay was significantly higher among the covid group  $15.7\pm12.0$  days compared to  $10.1\pm6.1$ days in the control group( $p<0.001$ ).
- Respiratory complications, electrolyte disturbance, AKI were higher amongst the covid group ( $p<0.001$ ). whereas no significant difference was seen in DVT, neurological or cardiac complications.

Parameters	Covid Positive (N=51)	Covid Negative (N=223)	p value
Age	$80.7\pm10.9$	$78.8\pm11.4$	0.277
NHFS	$4.9\pm1.7$	$4.7\pm1.7$	0.526
Charlton Comorbidity Index	$5.2\pm2.1$	$4.7\pm2.2$	0.138
30 day Mortality	18(35.2%)	24(10.76%)	<0.001*
90 day Mortality	25(35.2%)	44(19.73%)	<0.001*
AMTS	$6.7\pm3.8$	$7.1\pm3.6$	0.64
Hospital stay	$15.7\pm12.0$	$10.1\pm6.1$	<0.001*
Delay in surgery(>48hours)	6	12	<0.001*
Own home	37	170	0.551
Care home/IMC/Nursing home	14	53	

# Discussion

Parameters	Andrew hall et all(IMPACT SCOT) Scottish study(3)	Babar Kayani et all( London study)(4)	Narang et all(sussex)(5)	Our study(WWL)
Covid positive(CP) : Covid Negative(CN)	78: 755	82: 340	86:596	51:223
30 day mortality(CP:CN %)	34.6: 9.0	30.5 vs 10.3	34.9 vs 6.1	35.2 vs 10.76
Significant differences( $p<0.01$ )	NHFS $\geq$ 7, ASA grade $\geq$ 3, length of stay $\geq$ nine days	smoking status, greater than three comorbidities, increased length of hospital stay	Operative delay, NHFS (5.9vs5.0), Extracapsular fracture	Length of hospital stay, Respiratory complications, Operative delay

3. Hall AJ, Clement ND, MacLullich AMJ, White TO, Duckworth AD. IMPACT-Scot 2 report on COVID-19 in hip fracture patients. Bone Joint J. 2021 May;103-B(5):888-897. doi: 10.1302/0301-620X.103B.BJJ-2020-2027.R1. Epub 2021 Jan 25. PMID: 33487012
4. Kayani B, Onochie E, Patil V, Begum F, Cuthbert R, Ferguson D, Bhamra JS, Sharma A, Bates P, Haddad FS. The effects of COVID-19 on perioperative morbidity and mortality in patients with hip fractures. Bone Joint J. 2020 Sep;102-B(9):1136-1145. doi: 10.1302/0301-620X.102B9.BJJ-2020-1127.R1. Epub 2020 Jul 7. PMID: 32634023.
5. A. Narang & G. Chan & A. Aframian & Z. Ali. Thirty-day mortality following surgical management of hip fractures during the COVID-19 pandemic: findings from a prospective multi-centre UK study. International Orthopaedics <https://doi.org/10.1007/s00264-020-04739-y>

# Conclusion

- COVID-19 was independently associated with an increased 30-day mortality rate for patients with a hip fracture.
- Most of the patients acquired covid-19 during hospital stay
- Increased risk of respiratory complications, electrolyte disturbances postoperatively in covid patients
- Operative delay happen more commonly in covid patients than those without

# Recommendation

- Uniform screening for all patients undergoing surgery for covid-19 during admission and at weekly interval during hospital stay
- Identification of risk factors, anticipate complications and apply preventive strategies to avoid them
- Covid vaccination to everyone
- Social distancing, face mask regular hand wash should be strictly followed