

Trauma During a Pandemic: It Doesn't Stop. Lessons from the Deathstar

C. Crome, M.J. Kennedy, D.W. Shields, A. Marsh, D. Mansbridge, B. Jamal.
Trauma and Orthopaedic Department, Queen Elizabeth University Hospital, Glasgow, UK

Introduction

The pandemic of COVID-19 is placing an unprecedented strain on health services globally, being declared a pandemic by the World Health Organisation in March¹. On 23 March 2020 the UK Government enacted a national lockdown in order to reduce transmission and attempt to reduce the burden on the NHS, limiting citizens ability to leave their homes except for medical reasons, essential shopping, essential work and one brief period of exercise each day².

Aim

This single centre prospective study attempts to ascertain the impact of Government's decision to enact lockdown, in response to the COVID-19 pandemic, on the number, aetiology, management and outcomes of patient's admitted under the care of the Trauma & Orthopaedic Department at the Queen Elizabeth University Hospital, Glasgow.

Methods

Data for patients requiring inpatient Orthopaedic management (including those transferred from other hospitals) was collected prospectively from the largest University Hospital in Scotland during the time period of the 23th March 2020 (the date of commencement of UK lockdown phase 1) until the 28th May 2020 (the date of the easing of phase 1 lockdown measures), and the retrospectively collected for the same time period in 2019. Data collected included patient demographics, diagnoses, aetiology, inpatient management and mortality.

Variable	2019	2020	P value
Total number	641	539	0.001*
Age, mode(IQR)	62.25 (38.75-85)	63.01 (49-82)	<0.0001*
Female Sex, n (%)	351 (54.76)	319 (59.14)	0.126
SIMD quintile, n (%)			0.778
1	237 (36.97)	201 (37.29)	
2	111 (17.32)	96 (17.81)	
3	75 (11.70)	52 (9.65)	
4	75 (11.70)	70 (12.99)	
5	132 (20.59)	118 (21.89)	
Out of Scotland	11(1.72)	2(0.37)	0.046*

Table 1. Patient demographics for Trauma & Orthopaedic admissions. * denotes statistical significance

Body Area	2019	2020	P value
Pelvic #, n (%)	32 (4.39)	42 (6.65)	0.067
Hip #/dislocation, n (%)	159 (21.81)	178 (28.16)	0.006*
Lower limb #/dislocation, n (%)	156 (21.40)	113 (17.88)	0.094
Lower limb non osseous injury, n (%)	34 (4.66)	17 (2.69)	0.056
Upper limb #/dislocation, n (%)	139 (19.07)	135 (21.36)	0.293
Upper limb non osseous injury, n (%)	7 (0.96)	17 (2.69)	0.016*
Hand, n (%)	102 (13.99)	54 (8.54)	0.002*
Spinal #, n (%)	50 (6.86)	36 (5.70)	0.379
Spinal non #, n (%)	2 (0.27)	0 (0)	0.502
Infection, n (%)	33 (4.53)	26 (4.11)	0.709
Rib #, n (%)	15 (2.06)	14 (2.22)	0.840

Table 2. Comparison of anatomical location of injuries requiring Trauma & Orthopaedic admission. * denotes statistical significance

Mechanism of Injury	2019	2020	P value
Low energy Falls, n (%)	331 (51.64)	271 (50.38)	0.642
High energy Falls, n (%)	42(6.55)	48 (8.91)	0.502
Occupational, n (%)	10 (1.56)	8 (1.48)	0.916
RTC, n (%)	34 (5.30)	19 (3.53)	0.142
Sports, n (%)	56 (8.74)	44 (8.16)	0.724
Violence/Assault, n (%)	31 (4.84)	19 (3.53)	0.265
Infection, n (%)	51 (7.96)	18 (3.34)	<0.001*
Atraumatic, n (%)	33 (5.15)	42 (7.79)	0.014*
DIY/Gardening, n (%)	9 (1.40)	31 (5.75)	<0.001*
Accidental injury, n (%)	18 (2.81)	15 (2.78)	0.979
Medical, n (%)	9 (1.40)	13 (2.41)	0.202
Animal Bite, n (%)	17 (2.65)	11 (2.04)	0.492

Table 3. Mechanism of Injury. * denotes statistical significance

Results

There was a significant reduction in the volume of Orthopaedic admissions in 2020 compared with 2019 (539 vs 641, p=0.001). The number of multiply injured and polytrauma patients increased in 2020. There was a statistically significant increase in the volume of admissions related to hip fractures or dislocations in 2020 (28.16% vs. 21.81%, p=0.006) whilst admissions related to hand surgery fell from 13.99% to 8.54% (p= 0.002). There was a significant reduction in admissions relating to infection, (7.96% in 2019, vs 3.34% in 2020, p= <0.001), whilst there was a significant increase DIY and gardening related injuries (1.4% in 2019 vs 5.75%, p= <0.001). There was an increase in 30-day Mortality in 2020 compared with 2019 (7.24% vs. 4.68%, p= 0.06.)

Conclusion

This study has demonstrated that the UK wide lockdown, in response to the COVID-19 crisis, has had a significant impact on volume, aetiology and management of patients requiring admission under the care of Trauma & Orthopaedic services. We have demonstrated an increased burden of fragility fractures, and the ongoing need for management strategies to help care for these vulnerable patients.

References:

- World Health Organization, Coronavirus disease, World heal organ; March 2020. Available from: <https://www.who.int/emergencies/diseases/novel-coronavirus-2019>.
- Gov.uk. Effective 'lockdown' to be introduced. Available from: <https://www.gov.uk/news/effective-lockdown-to-be-introduced/>