Letter to editor

Siddarth David

Chandrika Verma

Kapil Dev Soni

Nobhojit Roy

Martin Gerdin Wärnberg

A recent paper from Malawi compared the risk of mortality among vehicular trauma patients transported by different modes of transport [1]. After adjusting for injury severity, the paper reported higher risk of mortality among patients transferred by police vehicles. India, like Malawi, is a low- and middle-income country and has a large burden of trauma [2]. Similarly, India has limited pre-hospital services such and different forms of transport, such as police vans are used to take trauma patients to the hospital [3, 4].

We used the Towards Improved Trauma Care Outcomes (TITCO) in India cohort, based on data from four tertiary care hospitals across urban India (collected between 2013-2015), to measure the risk of mortality by mode of transportation to the hospital in directly admitted vehicular trauma patients. We estimated the relative risk of mortality using a Poisson multivariate regression. We adjusted for age, sex, and trauma severity using Injury Severity Score (ISS).

Table 1:Characterstics of directly admitted Vehicular Trauma in TITCO-India Data set and Purceell et al. 2020

Variable

TITCO\_India

Purcell\_et\_all\_2020

Gender (female %)

13.69

19.8

Age, years, mean (SD)

35.4 (12.9)

31.6 (15.9)

Injury Severity, median (IQR)

10 (8-14)

8 (5–9)

Mode of Transport (%)

Ambulance

23.77

–

Police Vehicle

39.59

9.4

Private vehicle

21.87

68.8

Motor Rickshaw, Taxi car

14.52

–

Minibus

–

17.4

Others

–

4.4

Time of Presentation, median (IQR)

1 (0.6-2)

1 (0-3)

Mortality (%)

15.25

7.8

\* Injury Severity Score

† Malawi Trauma Score

Table 2: Relative Risk of Mortality of patients brought by Police Vehicles

X\_

TITCO\_India\_Dataset

Purcell\_et\_al\_2020

Relative Risk

1.529

1.56

CI at 95%

(1.032, 2.321)

(1.13–2.17)

p-value

0.03

0.08

\* Adjusted for time to presentation, injury severity, and injury mechanism, Reference group Ambulance

† Adjusted for time for presentation, Age, Sex, and Injury Severity

‡ Refernce group Ambulance Reference group private vehicles

Of the 16000 patients in the TITCO cohort, 1668 were adult vehicular trauma patients who were directly admitted to the study sites. Of these complete data was available for 1109 patients. A brief comparison of the patient profile of the Indian and the Malawi cohorts is given in Table 1. The overall mortality was 15.19 per cent. The most common mode of transport used for direct vehicular trauma patients was police vehicles (39.96%), followed by ambulance (23.51%), private vehicles (22.33%), and public transport such as motor rickshaws and cars (14.2%).

The Poisson multivariate regression analysis showed that the relative risk of mortality for police vehicles was higher when compared to patients transported by ambulances (RR 1.52, 95% CI 1.03– 2.32, p value = 0.03), when adjusting for age, sex, and ISS. This was higher than the relative risk of mortality due to private vehicles or taxis and motor rickshaws when compared to ambulances (Table 2).

Nearly one-fourth of the patients in the TITCO cohort arrived by ambulance, indicating the maturity of the pre-hospital care system existing in urban India. The relative risk of mortality of patients brought by police vehicles are very similar (1.53 vs 1.56) in both the countries. Our analysis underscores that the solutions suggested by the authors for Malawi may be be applied in the urban Indian setting. Therefore, there is a need to explore context-specific strategies such as training the police personnel to address the burden of trauma mortality in LMIC settings with underdeveloped pre-hospital system.

# References

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