Analysis of road traffic accidents involving standing electric scooters as reported in newspapers in Italy

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Background

We aimed to estimate the burden of accidents caused by electric scooters and identify characteristics, severity, and type of injuries.

Methods

We analyzed news reports about electric scooter crashes occurring in Italy from January 1, 2019, to September 30, 2020, and reported in newspapers indexed on Google, Yahoo, or Bing when a road traffic accident involved an electric scooter and caused damages or injuries.

Results

We identified 96 road traffic accidents (age 30±16y, 79% male). Two patients (2.1%) were driving with a helmet, and other three (3.1%) while intoxicated.
In 68% of cases, the accident was a collision with another vehicle or a pedestrian. 30% of subjects were transported with life-threatening injuries to the emergency department. In 15%, the EMS physician was dispatched to the scene. Head trauma was the most common injury (60%). Patients with life-threatening conditions were more likely to have head trauma (9/11 [82%] vs. 23/42 [55%]; P=0.10) and polytrauma (4/11 [36%] vs. 2/42 [4.8%]; P=0.003). 15% of patients were admitted to the intensive care unit; only one death was reported.

Table 1. Characteristics of patients and accidents involving electric scooters.

	All patients (n=96)	Life-threatening conditions (n=18)	No life-threatening conditions (n=78)	p-value
Age, years (SD)	30 (16)	29 (15)	34 (19)	0.27
< 18 years old, n (%)	12/79 (15%)	1/18 (5.6%)	13/78 (17%)	0.28
< 14 years old, n (%)	6/79 (7,6%)	1/18 (5.6%)	5/78 (6.3%)	0.90
Male sex, n (%)	71/90 (79%)	15/18 (83%)	56/72 (78%)	0.60
Loss of control/ Falling off, n (%)	32/94 (34%)	7/18 (39%)	25/76 (34%)	0.63
Collision, n (%)	62/94 (68%)	11/18 (61%)	53/76 (70%)	0.58
Car, n (%)	46/94 (49%)	9/18 (50%)	37/76 (49%)	0.96
Heavy vehicle, n (%)	5/94 (5.3%)	2/18 (1.1%)	3/76 (4.0%)	0.23
Pedestrian, n (%)	4/94 (4.3%)	0/18 (0%)	4/76 (5.3%)	0.32
Motorcycle, n (%)	4/94 (4.3%)	0/18 (0%)	4/76 (5.3%)	0.32
Electric scooter, n (%)	2/94 (2.1%)	0/18 (0%)	2/76 (2.6%)	0.48
Bicycle, n (%)	1/94 (1.1%)	0/18 (0%)	1/76 (1.3%)	0.73
Time of day				
7 am – 1 pm, n (%)	15/83 (18%)	4/17 (24%)	11/66 (17%)	0.51
1 pm – 6 pm, n (%)	29/83 (35%)	3/17 (18%)	26/66 (39%)	0.09
6 pm – 22 pm, n (%)	17/83 (20%)	5/17 (29%)	12/66 (18%)	0.31
22 pm – 7 am, n (%)	22/83 (27%)	5/17 (29%)	17/66 (26%)	0.76
Weekday				
Monday, n (%)	15/96 (16%)	1/18 (5.6%)	14/78 (18%)	0.19
Tuesday, n (%)	13/96 (14%)	5/18 (28%)	8/78 (10%)	0.05
Wednesday, n (%)	14/96 (15%)	4/18 (22%)	10/78 (13%)	0.19
Thursday, n (%)	10/96 (10%)	2/18 (11%)	8/78 (10%)	0.92
Friday, n (%)	18/96 (19%)	3/18 (17%)	15/78 (19%)	0.80
Saturday, n (%)	16/96 (17%)	2/18 (11%)	14/78 (18%)	0.48
Sunday, n (%)	10/96 (10%)	1/18 (5.6%)	9/78 (12%)	0.45

Percentages may not total 100 because of rounding.

Conclusions

Road traffic accidents involving electric scooters were accompanied by severe injuries including head trauma and polytrauma, requiring EMS physician intervention and intensive care unit admission in a non-negligible proportion of cases. Considered the sporadic use of helmets and that head trauma was the most frequent injury, prevention campaigns by governmental authorities are urgently needed to reduce electric scooter-related morbidity

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