

# Pedestrian Traffic Fatalities in Southwestern Croatia

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## ABSTRACT

*Pedestrians are often considered the most vulnerable group of road users. The aim of our study was to analyze the forensic aspects of pedestrian traffic fatalities in Rijeka region. We analyzed pedestrian fatalities in a 5-year period (2002–2006), which included 44 fatally injured pedestrians examined at the Rijeka Institute of Forensic Medicine. The male:female ratio was 1:1. The median age was 57 (ranging from 2–95), with 66% aging over 60 and 89% aging over 40. The least of the accidents happened in July and during weekend. Almost 65% of the fatally injured pedestrians were sober (0.00 g/kg) and 24% had blood alcohol level of more than 1.50 g/kg. Our study showed that pedestrian fatalities in Rijeka region have specific forensic characteristics. These findings suggest the necessity of the specific approach and caution in planning of prevention measures for specific traffic fatalities, in this case pedestrian ones.*

**Key words:** pedestrians, traffic accident, Croatia

## Introduction

Pedestrians are often considered the most vulnerable group of road users. More than 8,000 pedestrians are killed and a further 300,000 injured each year in road accidents throughout Europe<sup>1</sup>.

The aim of our study was to analyze the forensic aspects of pedestrian traffic fatalities in Rijeka region.

## Materials and Methods

The Rijeka Institute of Forensic Medicine covers the area of 7,993 km<sup>2</sup> with the population of 322,964 people mostly living in the city of Rijeka, as a regional center.

We analyzed pedestrian fatalities in a 5-year period (2002–2006). Our study population included 44 fatally injured pedestrians examined at the Rijeka Institute of Forensic Medicine, with the male:female ratio of 1:1. The median age was 57 (ranging from 2–95), with 66% aging over 60 and 89% aging over 40.

## Results

The least of the accidents happened in July (only 1) (Figure 1) and during the weekend (Saturday and Sun-

day) (14%) (Figure 2). The highest incidence of pedestrian traffic fatalities was found during two distinct periods of the day: first, 7–12 a.m. (39%) and second 5–8 p.m. (42%) (Figure 3). On the contrary, during the night (11 p.m.–5 a.m.) there were only 2 pedestrian traffic fatalities (6%) (Figure 3).

More than a half of the accidents happened in Rijeka, the regional centre. Most of the vehicles involved were cars (64%), followed by the trucks (17%). Almost 65% of the fatally injured pedestrians were sober (0.00 g/kg) and 24% had blood alcohol level of more than 1.50 g/kg (Figure 4). As for the direct cause of death, found on autopsy, 59% were multiple severe injuries, followed by head and neck injuries with 16%. Most of them died on the scene of the accident, and those who died in hospital few days later, died of posttraumatic pneumonia, fat embolism and clot embolism.

## Discussion and Conclusion

Our study showed that pedestrian fatalities in Rijeka region have specific forensic characteristics. For example, we found an equal proportion of males and females,

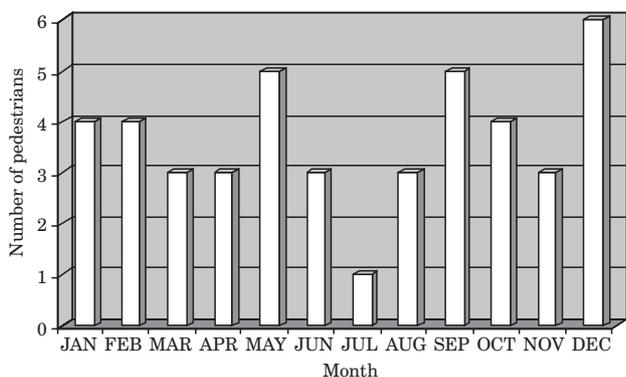


Fig. 1. Pedestrian fatalities by month.

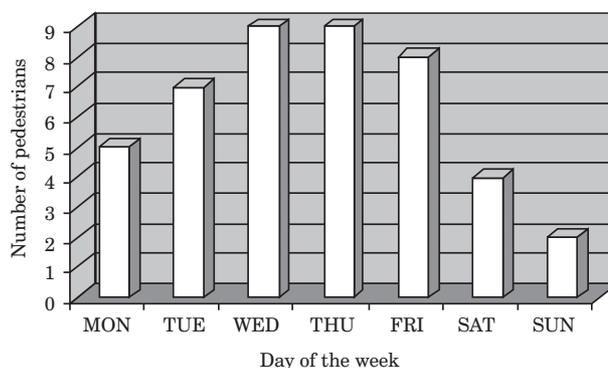


Fig. 2. Pedestrian fatalities by the day of the week.

while other studies showed female predominance<sup>2-4</sup>. Also, gender and age pattern is different from fatally injured drivers, most of which are younger middle-aged men<sup>5,6</sup>. Furthermore, most of the drivers die during the weekend, while we found most of the pedestrian fatalities happening in the middle of the week, and least of them during the weekend<sup>7</sup>.

In our study, fatally injured pedestrians were mostly either sober (0.00 g/kg) or had blood alcohol level of more than 1.50 g/kg which is comparable to other authors<sup>4</sup>.

As for the injury pattern, head and neck injuries predominate, apart from the primary injuries on the legs<sup>8</sup>. This is in accordance with other authors<sup>9</sup>.

Our findings suggest the necessity of the specific approach and caution in planning of prevention measures for specific traffic fatalities<sup>7,10,11</sup>, in this case pedestrian ones. This is further emphasized by the fact that only 3 children died as passengers during the examined period, which is a result of well planned and targeted persistent prevention measures.

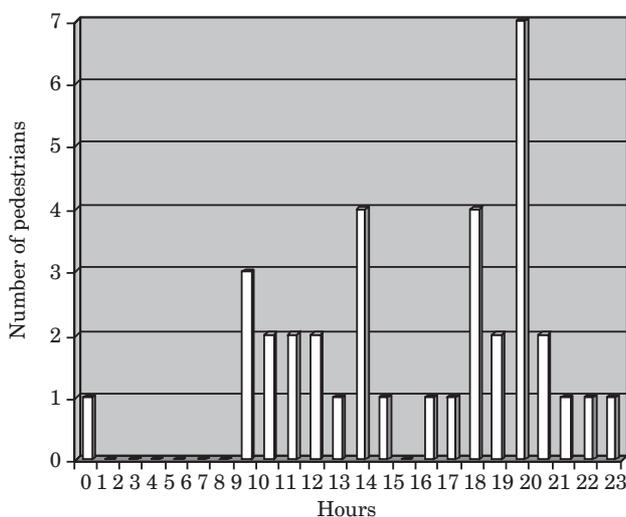


Fig. 3. Pedestrian fatalities by the time of the day.

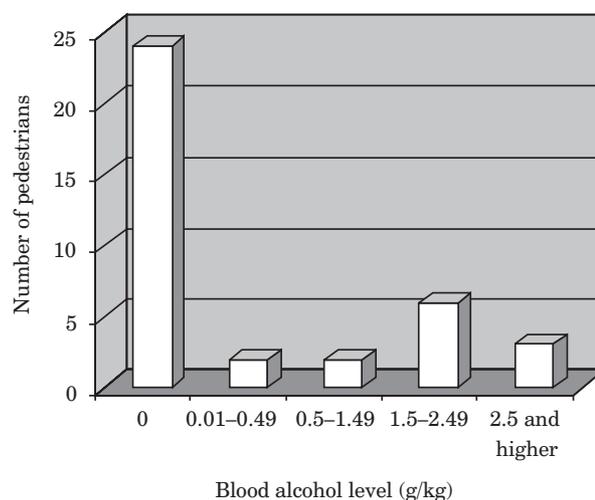


Fig. 4. Blood alcohol level of fatally injured pedestrians.

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## **PROMETNE NEZGODE SA SMRTNO STRADALIM PJEŠACIMA U JUGOZAPADNOJ HRVATSKOJ**

### **S A Ž E T A K**

Pješaci se često smatraju najranjivijom skupinom sudionika u prometu. Cilj naše studije bio je analizirati forenzičke aspekte prometnih nezgoda sa smrtno stradalim pješacima u riječkoj regiji. Analizirali smo takve prometne nezgode u periodu od 5 godina (2002–2006.), što je uključivalo 44 smrtno stradala pješaka pregledana pri Zavodu za sudsku medicinu u Rijeci. Omjer muškaraca i žena iznosio je 1:1, s prosječnom dobi od 57 godina (raspon 2–95), te sa 66% pješaka starijih od 60 godina i 89% starijih od 40 godina. Najmanje nezgoda sa smrtno stradalim pješacima dogodilo se tijekom srpnja i u dane vikenda. Gotovo 65% smrtno stradalih pješaka bilo je trijezno (0,00 g/kg), a 24% imalo je iznad 1,50 g/kg alkohola u krvi. Naša studija pokazala je da nezgode sa smrtno stradalim pješacima u riječkoj regiji imaju specifične forenzičke karakteristike. Ti rezultati ukazuju na nužnost specifičnog pristupa i opreza u planiranju preventivnih mjera u odnosu na specifične vrste prometnih nezgoda, u konkretnom slučaju onih sa smrtno stradalim pješacima.