Abstract

Changes and trends of pre-hospital emergency disease spectrum in Beijing in the past decade (from 2003 to 2012)

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Backgrounds
Pre-hospital emergency call is a crucial index to indicate emergency disease spectrum. For Beijing, which has changed greatly in economy and population, analyzing the trend of the emergency disease spectrum can greatly contribute to formulate the pre-hospital emergency planning.

Methods
In this 10-year retrospective study, pre-hospital emergency records of Beijing Emergency Medical Center from 2003 to 2012 were collected. Medical Priority Dispatch System was used to classify the call demands. Linear regression models were constructed to examine the changing trends.

Results
2,410,575 cases were collected, and 2,278,415 of them were analyzed in this study. The results showed that:

1. In the past decade, the number of pre-hospital emergency call demands soared from 150,656 to 309,297 (204.6%, 2012/2003, p<0.001).
2. The top five call demands based on the rank of proportion were trauma related demands(25.4%, including falls(5.0%), traffic/transportation incidents(7.2%) and traumatic injuries(13.1%)), sick person(17.7%), heart problems(11.4%), unconscious/fainting(10.0%) and breathing problems(8.1%). Also, they were the top five fastest growing call demands.

Conclusion
Compared with the growth of population (145.4%, 2012/2003), pre-hospital emergency calls increased much more, which shows a growing desire on ambulance service. Different from developed countries, the proportion of trauma related cases was constantly in the top rank and continuously increasing, much higher than that in San Francisco (15.7%), which could be resulted from accelerated city construction and rapid augment of vehicle quantity (244.8%, 2012/2003).
Based on the changes and trends of pre-hospital emergency disease spectrum, it is encouraged to provide specific training program for emergency medical service staff and improve related medical devices.

Note
Beijing emergency medical center is the only pre-hospital emergency system of Beijing government from accelerated city construction and rapid augment of vehicle quantity(244.8%, 2012/2003). Based on the changes and trends of pre-hospital emergency disease spectrum, it is encouraged to provide specific training program for emergency medical service staff and improve related medical devices.