

Mgr Jan Stachurski

Title. Usage of traction splints in shaft femur fractures in Emergency Medical Service.

Abstract

Introduction. Fractures of the femoral shaft are present health problem in medicine for years. One of the potential options for pre-hospital and early hospital management is to immobilize patients in the form of a traction splint.

Aim. The aim of the study was to examine to what extent the State Emergency Medical Services in Poland is prepared to use traction splints.

Material and methods. The work was research and multi-stage. Data from the National Health Fund from 2015-2018 was obtained to assess the incidence of femoral shaft fractures. Legal acts regarding the possibility of using traction splints were analyzed. Documents were obtained regarding the pre-graduate education of paramedics from six different colleges and the existing legal acts and documents on professional development of paramedics were analyzed to assess the state of competence of paramedics to use traction splints. The equipment of the Air Ambulance with traction splints was tested. Questionnaires were sent to all 208 dispatchers of emergency medical teams and to all 235 hospital emergency departments in Poland. An educational study was conducted among 3rd year students, 6th semester of paramedic education from five different colleges, to assess the time needed to acquire competences in the field of the traction splints and to compare several models of the traction splints.

Results. In 2015-2018, there was an upward trend in the number of femoral shaft fractures from 4046 cases in 2015 to 4396 patients in 2018. The incidence of femoral shaft fractures is 10.5 / 100,000 / year, although it varies depending on age. In the first 10 years of life it is higher (about 11.1 / 100,000 people / year), followed by a decrease in the incidence, up to 2.9 / 100,000 people / year in the range of 40-49 years. Then, this value begins to increase significantly, in the group over 70 years of age to increase in jumps, up to 55.1 / 100,000 inhabitants / year in the group of people over 90 years. In Poland, it is permissible to use traction splints in the State Emergency Medical Service but there is no obligation to have traction splints on the system units. After analyzing the documents from six universities training paramedics, it should be

assumed that during pre-graduate education paramedics in at least half of the examined colleges learn about the subject of traction splints, the rest lack such evidence. Based on the analysis of paramedic training programs, every paramedic who has undergone a refresher course should become familiar with the principles of using traction splints and use the traction splints during practical classes. Air Ambulance does not use traction splints. Questionnaires were received for more than 556 emergency medical teams (35% of all). In the sample examined, only 11% of emergency medical teams had traction splints with the majority of physician teams over the paramedic only (17% vs 10%). Questionnaires were received from 24% of all hospital emergency departments, of which only 18% had traction splints. Only in two cases was there a procedure for replacing the splints in the "piece-by-piece" mode between the hospital emergency department and medical emergency teams. Educational classes were held for 116 students of the 6th semester of bachelor studies of paramedic education, of which only 41% had contact with the traction splint during their lifetime. Most students would like to use the Slishman Traction Splint STS (50%) and it received an overall highest rating (average 4.39 on a scale of 1-5). During the final test, the STS was also installed the fastest (154 seconds on average).

Conclusions. The incidence of femoral shaft fractures was estimated at 10.5 / 100,000 people / year. An increased risk of death during the next year was observed for people who suffered a fracture of the femoral shaft. Not all paramedics acquire the competence to use the traction splints during undergraduate education, but at the stage of professional development they should have contact with the traction splints. Helicopter Emergency Medical Service in Poland does not use traction splints. Most emergency medical teams and hospital emergency departments do not use traction splints. Hourly educational activities should sufficiently provide basic knowledge about the principles of using the traction splint. The STS Slishman Traction Splint is the best rated splint and has potentially the widest application in the conditions of the State Emergency Medical System.