

Abstract

The aim of the study: The aim of this work is to find out the possibilities to influence the clinical state of the patients suffering with incomplete spinal cord lesion syndrome with the help of a therapeutic video played through a virtual reality helmet.

Methods: The research was conducted with 22 probands (15 males and 7 females) aged between 27 and 76 years (the average age of 55 ± 14 years) from the client of Rehabilitation Centre Kladruby. The probands were divided into two homogenised groups with the same number of members. The control group received a standard rehabilitation programme set by the Rehabilitation Centre. The research group followed the same plan but in addition to this, they were given helmets, and a video with virtual reality was played daily on the total of 30 occasions. The clinical state before conducting the research and after was evaluated using the standard test ASIA impairment scale where the observed transformation was the total of motoric points for the lower limbs. Initial and final examination was conducted by professional and highly trained staff at Kladruby, always doctors. The variance between the initial and the final examination results and the length of stay at the centre were used to set the relative transformation of the clinical state in comparison with the previous clinical state after a month in the centre. With the help of Pearson correlation coefficient, the correlation between the age of probands, the initial diagnosis and the time spent in the rehabilitation centre.

Results: The average result of the relative change of the clinical state during one month for the control group was 10,53% with deviation of 6,59% and variable coefficient of 0,63. The research group's results were almost threefold 28,31% with deviation of 27,84% and a variable coefficient 0,98. The only confirmed correlation was a medium to strong negative correlation between the results and the period spent in the rehabilitation centre for the research group.

Key Words: virtual reality, spinal cord lesion, HMD, mirror neurons