

Does surgery finally improve the neurological status of the patients with cervical trauma?

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Introduction

Cervical spine injury (CSI) is affecting one in ten people with spine trauma [1,2]. Usually, it requires rapid management, more often than not through a surgical intervention.

The last provides a huge range of techniques, all of them, however, concluded in three approaches: posterior, anterior and posterior – anterior or anterior-posterior.

Although all of these methods seem equal for the achievement of neurological recovery, no one until now has evaluated whether this is true, and if there any additional factors playing a major role to the outcome, which represents the aim of the current study.

Methods

The American spinal injury association (ASIA) created a score system, evaluating the neurological outcome after CSI. In order to link the clinical outcome of the subaxial (C3-C7) cervical trauma to the used approach, the authors performed a meta-analysis, based on publications reporting neurological recovery with ASIA or Frankel grade system for the last 20 years.

All of the included articles were divided into groups based on the age of the participants (0-18 years; 19-54 years and 55< years) and afterwards into groups based on the surgical approach.

The analysis is performed with statistical program.

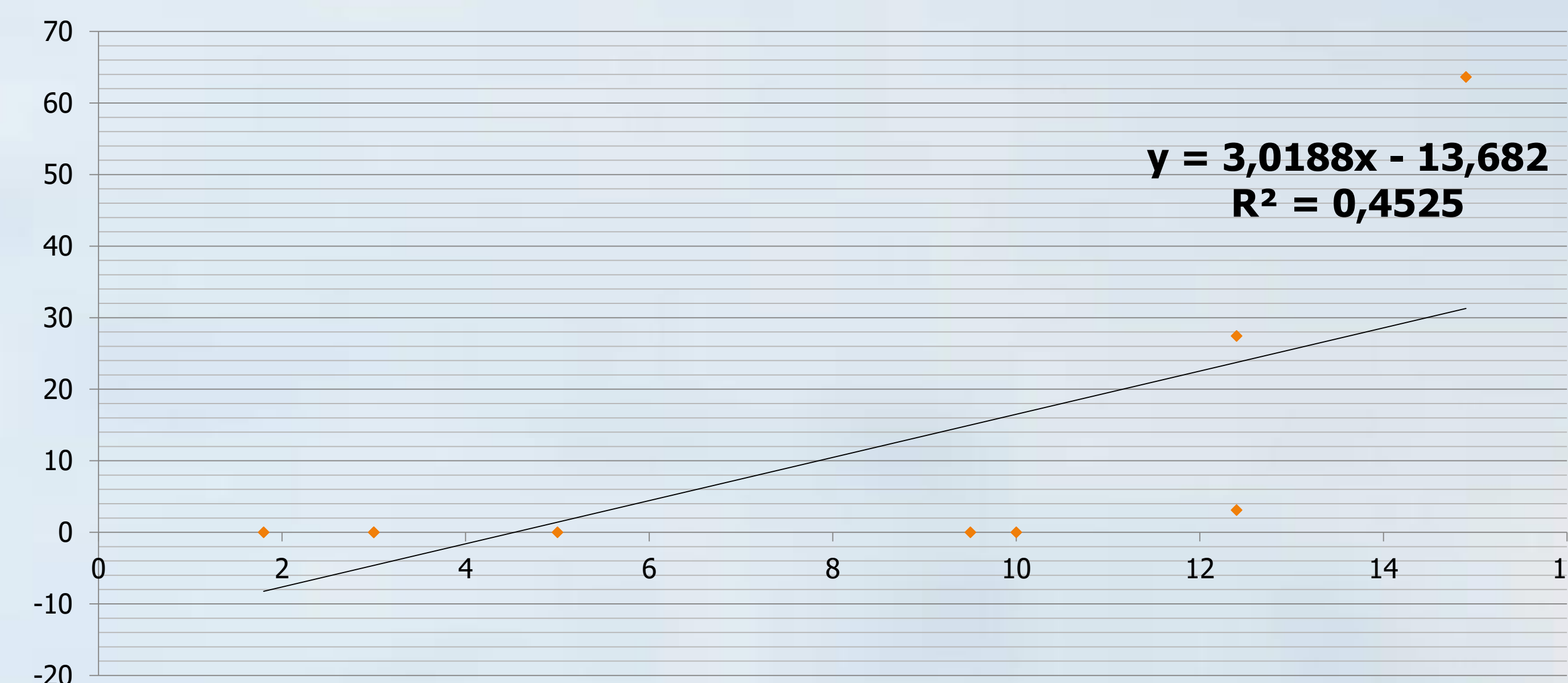


Figure 1. Correlation between age and non-improvement.

Results

After processing the data, the results reveal that the three approaches are unequal for the neurological recovery of the patients with subaxial cervical trauma. And age has a strong correlation with the used approach, which appears to play the key role to the final outcome. Moreover, the statistics show also that the majority of the people with grade A, and some who are grade B, tend to remain with the same preoperative status after surgery, when age is not considered as a factor (figure 1), which supports our findings - **that the surgical approach for subaxial cervical trauma should be applied according to the age of the participants, otherwise the improvement will not reach its most optimal values.**

Conclusion

The costs of spine management reach an enormous extend and because of this the surgical care should be reevaluated. Indeed surgery improves the neurological outcome, but the application of the approach based on the age could not only improve the neurological recovery, but also the costs of treatment.

References

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2. Nikova A, Birbilis T, Chatzipaulou V. Subaxial cervical trauma surgical approach and neurological outcome. Int J Surg Sci. 2018; 2(1): 21-27