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Evolution of blood sodium, potassium, and chlorides in patients with steoarthritis of the intervertebral disc compared to healthy volunteers

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Introduction

Quantitative analysis of the content of trace elements in human intervertebral discs affected by the degenerative process is of significant importance.

On the other hand, in the degenerative human intervertebral disc, the presence of an increased concentration of certain elements has also been noted, which may have a beneficial effect on its metabolism.

Materials and Methods

The aim of the study was to evaluate the concentration of potassium, sodium and chloride in a group of 60 patients with osteoarthritis of the lumbosacral spine qualified for microdiscectomy (S group) compared to 60 healthy volunteers (C group)



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Results

Patients qualified for surgery had a score of 5-7 on the Pffirman severity of degenerative changes.

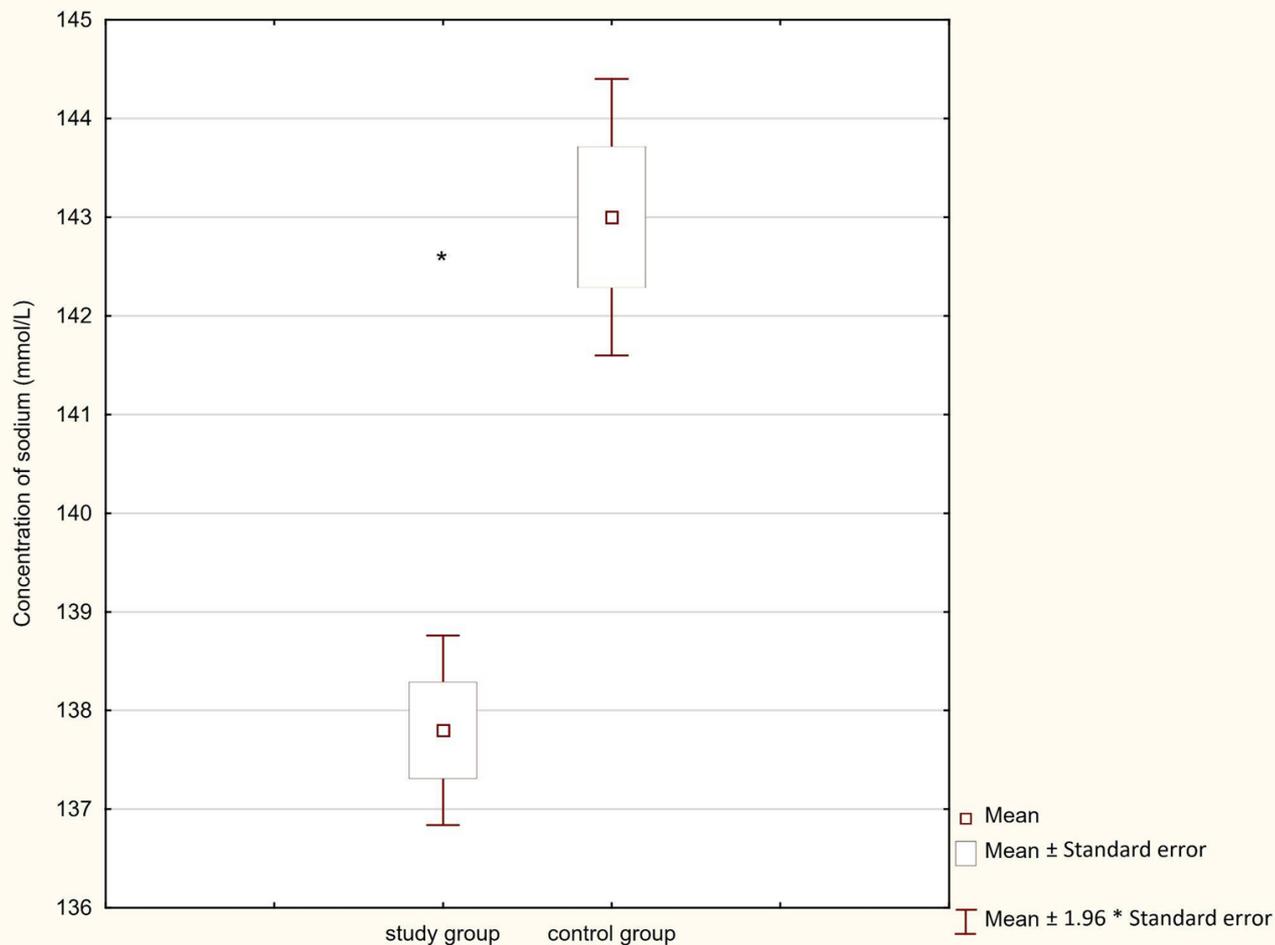
Statistical analysis showed significant differences in the concentration of the assessed ions: potassium: S vs. C 4.22 vs 3.47; $p = 0.000066$; chlorides S vs. C 103.2 vs. 107.90; $p = 0.000450$; sodium 137.80 vs 143.00 $p = 0,000011$.



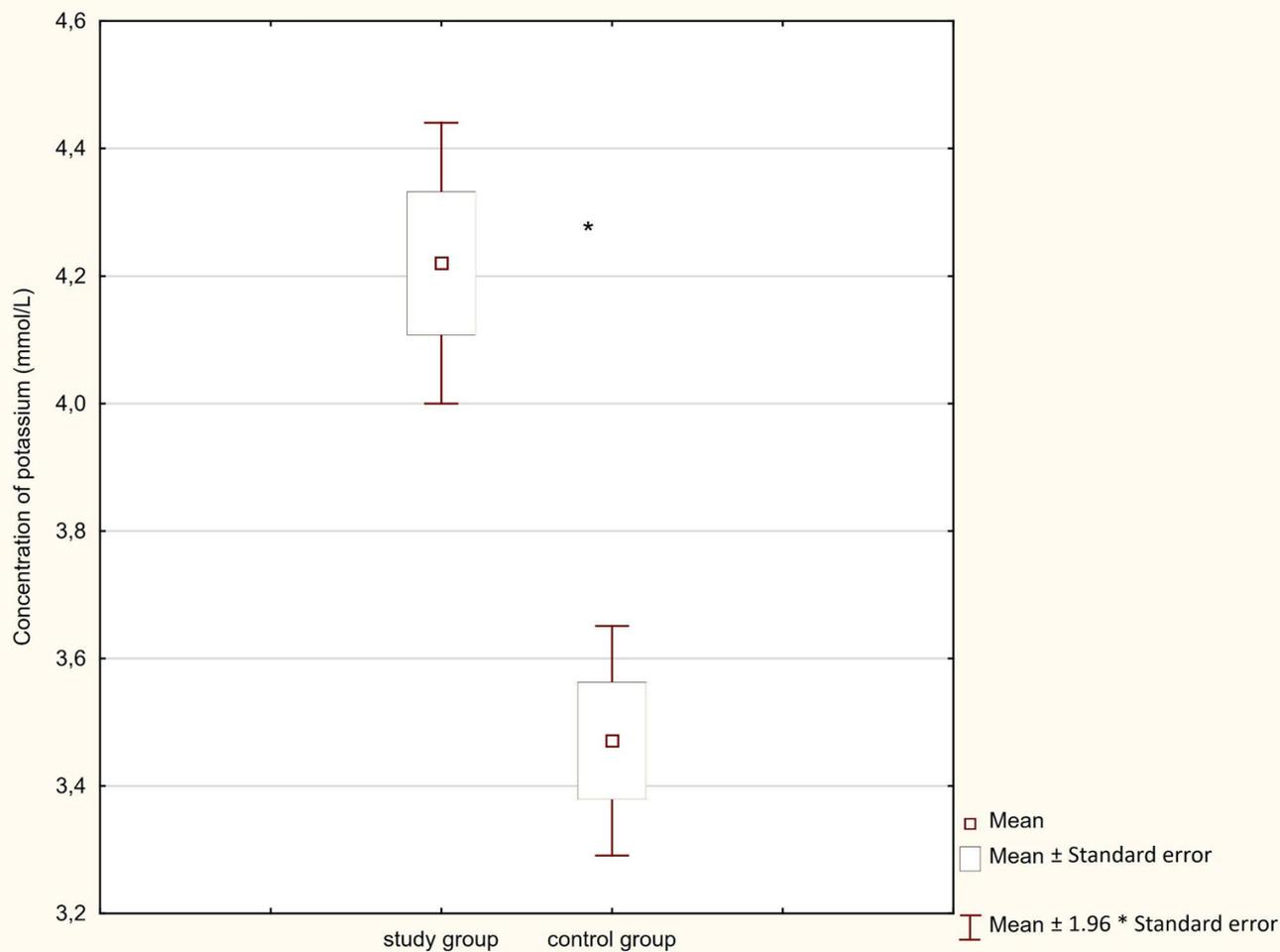
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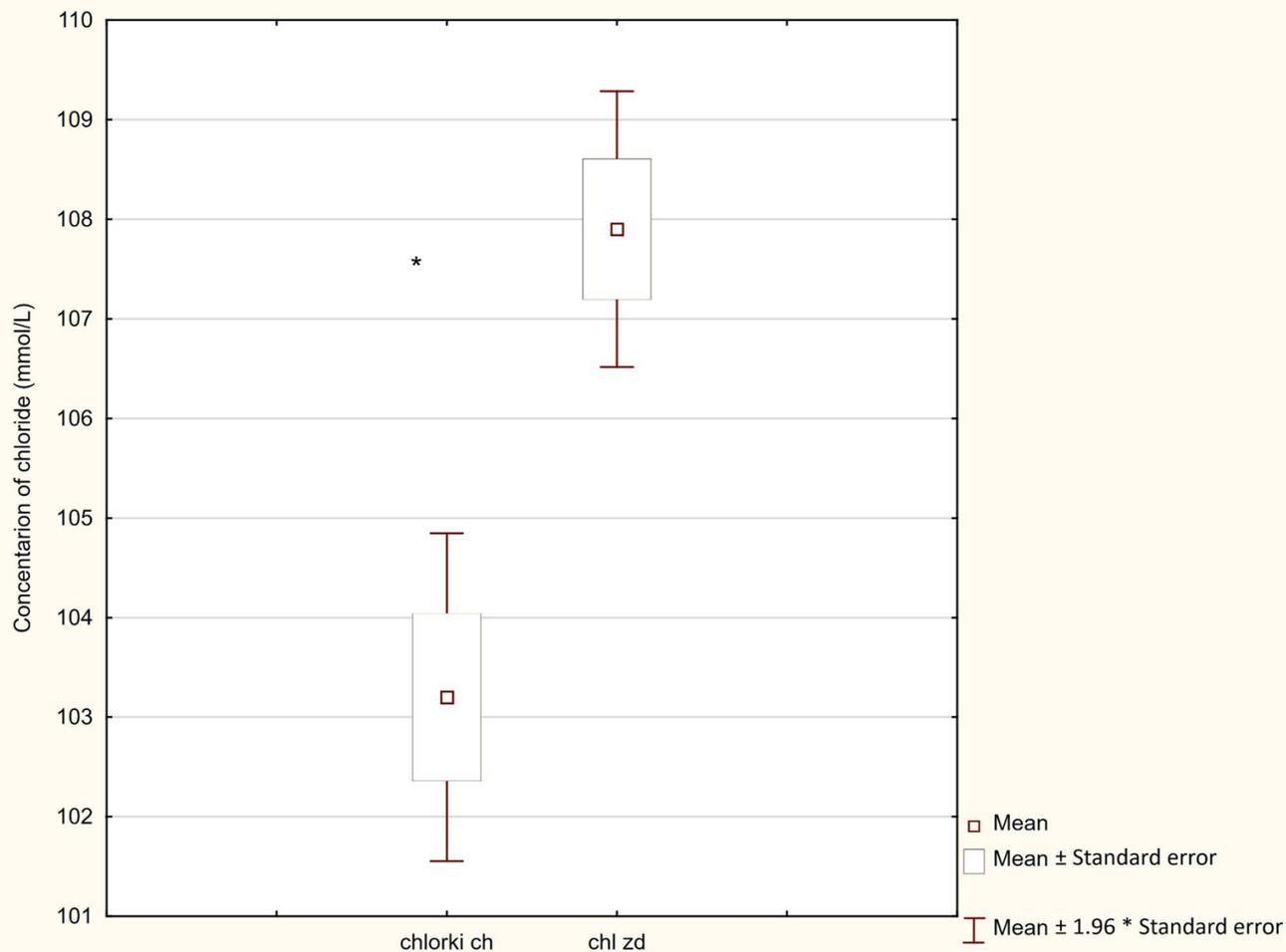
Evolution of blood sodium, in patients with steoarthritis of the intervertebral disc compared to healthy volunteers



Evolution of blood potassium, in patients with steoarthritis of the intervertebral disc compared to healthy volunteers



Evolution of blood chlorides, in patients with steoarthritis of the intervertebral disc compared to healthy volunteers



Conclusions

Water and electrolyte disturbances observed in patients with degenerative disc disease may be both the result and the result of abnormal muscle tone and nerve conduction disturbances.

It is possible that the observed changes are the result of increased cellular turnover, apoptosis.

However, further research is necessary, including the determination of these elements in intervertebral discs.



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Acknowledgments



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