A new predictive index for back muscle degeneration associated with aging

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Introduction

Lumbar lordosis

Lumbar paraspinal muscles
1. To evaluate the paraspinal muscle degeneration associated with aging
2. To determine the correlation between the T-back value and paraspinal muscle degeneration
Subjects

160 patients by 10 subjects of men and women in each decade aged 10 to 80 years of age

Lumbar lordosis $\geq 20^\circ$

Without considering the degree of LBP

Exclusion

Spondylolisthesis $\geq 1^\circ$

Scoliosis $\geq 10^\circ$

History of lumbar surgery
Methods

Body mass index

Axial T2-weighted MRI
  (at the intervertebral disc level from L1-L5)

Cross-sectional area of the paraspinal muscle

Fat infiltration of the paraspinal muscle

T-back value
Results
Pearson’s correlation coefficient

<table>
<thead>
<tr>
<th></th>
<th>CSA × Fat infiltration</th>
<th>CSA × T-back value</th>
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</thead>
<tbody>
<tr>
<td>$L_{1/2}$</td>
<td>-0.474</td>
<td>0.709</td>
</tr>
<tr>
<td>$L_{2/3}$</td>
<td>-0.482</td>
<td>0.737</td>
</tr>
<tr>
<td>$L_{3/4}$</td>
<td>-0.55</td>
<td>0.789</td>
</tr>
<tr>
<td>$L_{4/5}$</td>
<td>-0.634</td>
<td>0.749</td>
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Nagative correlation  Strongly correlation
Conclusion

Our new index, the T-back value, is a simple and practical means of evaluating back muscle degeneration associated with aging.

Authors Disclosure Information

None of the authors has any potential conflict of interest.