in MS patients, working together with neurologists, to prevent the appearance of fractures and protect the quality of life of these patients. An analysis of our whole cohort of MS patients will help us in correctly assessing the magnitude of this problem.

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POS0170

IMPROVING MANAGEMENT OF GLUCOCORTICOID INDUCED OSTEOPOROSIS IN RHEUMATOLOGY

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America

Background: Glucocorticoids (GC) are used in the treatment of various inflam-
atory conditions and it is estimated that about 1% of US population is treated
with long term steroids. High doses of GC particularly those used by rheumatolo-
gists have adverse effects on bone health and is associated with rapid bone loss
resulting in Glucocorticoid induced Osteoporosis(GIO) and an increased risk of
fractures. The risk of bone loss relates to high daily dose and the high cumulative
dose of the GC.

Despite the availability of effective preventative and treatment options, GIO
is often under treated with many patients treated only after a fracture has
occurred.

Objectives: The purpose of this study was to examine if providing education
to care providers lead to an improvement in the identification, evaluation, and
treatment of GIO.

Methods: This is a single center, prospective study that was performed at a
university based tertiary referral center. Patients over 40 years, receiving
a total cumulative dose of GC of >5 grams and/or a single dose of >30 mg
of prednisone or equivalent was enrolled. A patient list was generated by our
technology group. All providers received intervention in the form of an aca-
demic Journal Club, at which the current ACR guidelines regarding GIO was
reviewed. Monthly reminders were shared with all providers within our
monthly communications.

All the pre and post interventional data was analyzed. The continuous vari-
ables were analyzed using T-test or Mann-Whitney U test. Categorical variables
were analyzed using Chi-square Tests or Fisher’s exact tests. Statistical analysis
was performed using SAS9.4, and p value <0.05 was considered statistically
significant.

Results: Post education, there was a statistically significant increase in vita-
im D replacement and the use of bisphosphonates as well as a reduction in
the use of bone mineral density (BMD) tests within the at risk group while
on GC.

Table 1. Glucocorticoid induced Osteoporosis (GIO)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre-treatment (N=72)</th>
<th>Post-treatment (N=54)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographics</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>58.9 ± 19.2</td>
<td>64.2 ± 16.7</td>
<td>0.11</td>
</tr>
<tr>
<td>Medical History</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>68.1%</td>
<td>64.8%</td>
<td>0.70</td>
</tr>
<tr>
<td>Osteoporotic Fracture</td>
<td>15.3%</td>
<td>11.1%</td>
<td>0.50</td>
</tr>
<tr>
<td>Vascuities</td>
<td>26.4%</td>
<td>22.2%</td>
<td>0.59</td>
</tr>
<tr>
<td>Systemic Lupus Erythematosus</td>
<td>18.1%</td>
<td>13.0%</td>
<td>0.44</td>
</tr>
<tr>
<td>Rheumatoid Arthritis</td>
<td>12.5%</td>
<td>25.9%</td>
<td>0.05</td>
</tr>
<tr>
<td>Polymyalgia Rheumatica</td>
<td>6.9%</td>
<td>11.1%</td>
<td>0.41</td>
</tr>
<tr>
<td>Inflammatory Muscle Disease</td>
<td>18.1%</td>
<td>20.4%</td>
<td>0.74</td>
</tr>
<tr>
<td>Spondyloarthritis</td>
<td>1.4%</td>
<td>1.9%</td>
<td>0.99</td>
</tr>
<tr>
<td>Lab Results</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serum Vitamin D (Normal)</td>
<td>41.3% (19/46)</td>
<td>52.8% (19/36)</td>
<td>0.3</td>
</tr>
<tr>
<td>GIO Prevention Measures</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Calcium</td>
<td>2.8%</td>
<td>13.0%</td>
<td>0.04</td>
</tr>
<tr>
<td>Vitamin D</td>
<td>18.1%</td>
<td>61.1%</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Bisphosphonates</td>
<td>9.7%</td>
<td>35.2%</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>RANKL inhibitors</td>
<td>4.2%</td>
<td>11.1%</td>
<td>0.17</td>
</tr>
<tr>
<td>Bone Mineral Density</td>
<td>43.5% (10/23)</td>
<td>10.5% (2/19)</td>
<td>0.02</td>
</tr>
</tbody>
</table>

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POS0169

FETUIN-A AS A MARKER OF OSTEOPOROSIS AND OSTEOPOROTIC FRACTURES IN PATIENTS WITH RHEUMATOID ARTHRITIS

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Background: The main mechanism of the effect of fetuin-A (FeA) on bone metabolism is its ability to bind calcium and proteins of the TGF-β family. It has been proven that the optimal concentration of TGF-β is necessary for the differ-
etiation of bone tissue, and a high concentration inhibits bone mineralization.

Thus, adequate osteogenesis is based on a complex balance between FeA and TGF-β levels. It can be assumed that the determination of the FeA level in the blood of patients with rheumatoid arthritis (RA) will help to optimize the diagnosis and predict the severity of osteoporosis (OP).

Objectives: To study the possibility of predicting the development of osteoporos-
sis and osteoporotic fractures in patients with RA, depending on the level of FeA in blood serum.

Methods: We examined two groups of patients (52 patients with RA comp-
licated by OP, 58 patients with RA without OP) and 30 apparently healthy
individuals. The age of the surveyed ranged from 18 to 72 years, the average
age of the surveyed was 58.9 ± 19.2 years. The FeA level was determined by
an indirect enzyme-linked immunosorbent assay using a commer-
cial test. Bone mineral density (BMD) was also measured in both groups (Lunar DPX-NT GE).

Results: The average FeA level in the group of RA patients was lower than in the
group of conventionally healthy individuals (731.21 ± 109.9 µg/ml and 812.9 ± 76.6
µg/ml, respectively; F=13.34; p=0.0004). The normal FeA level was calculated
using the formula Ma2x0.7 in the group of apparently healthy individuals and ranged
from 863.55 µg/ml to 972.19 µg/ml.

A decreased level of FeA was found in 20 patients (86.96%) in the group of
patients with OP and in only 3 (13.04%) patients with RA who did not suffer from
OP (p<0.001). It can be concluded that patients with RA and a low concentration
of FeA in the blood serum have a higher risk of developing OP.

In the group of patients with normal FeA level, osteoporotic fractures were
observed in 12 (13.79%) patients and were absent in 75 (86.21%) patients
(p<0.001). Thus, RA patients with normal serum FeA levels have a lower risk of
osteoporotic fractures.

We also found a positive significant correlation between the level of FeA and
BMD in the femoral neck area. In the group of patients with a reduced FeA level
(23 people), the mean BMD values were 0.732±0.022 g/cm2, and in the group
of patients with a normal FeA level (87 patients) - 0.890±0.014 g/cm2 (p<0.001, F=27.663). The obtained values are in agreement with the literature data on the
effect of the serum FeA concentration on the BMD values.

Conclusion: We consider it expedient to determine the serum FeA concentra-
tion in patients with RA. At a FeA level of 653.55 µg/ml and below, a higher risk
of developing OP and osteoporotic fractures can be predicted. In this case, the
patient is shown a standard examination for osteoporosis. At values of
653.55 µg/ml and above, a more expectant management of the patient is allowed. Thus,
by determining the serum concentration of FeA, it is possible to implement an
integrated approach to the patient and to optimize the schemes for the diagnosis
of OP in patients with RA.