The impact of revascularization on the change in cultivated bacteriota in ulcerations in neuropathic-ischemic diabetic foot syndrome

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Disclosure

Speaker name: Mateusz Gajda, MD

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☒ I do not have any potential conflict of interest
Aim and Methodology

Qualitative and quantitative assessment of the microbiota according to revascularization

Tissue sample collected for ESwab®: 1mL of Liquid Amies in a plastic, screw cap tube prior and 30 days after revascularization

Type 2 diabetes
Rutherford 5 or 6

Age 40-75
### STUDY GROUP

<table>
<thead>
<tr>
<th>Factor</th>
<th>n=23</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender (F/M)</td>
<td>4/19</td>
</tr>
<tr>
<td>Age - median</td>
<td>68.3</td>
</tr>
<tr>
<td>Rutherford 5</td>
<td>15 (65.2%)</td>
</tr>
<tr>
<td>Rutherford 6</td>
<td>8 (34.8%)</td>
</tr>
<tr>
<td>Chronic diseases</td>
<td></td>
</tr>
<tr>
<td>Hypertension</td>
<td>21 (91.3%)</td>
</tr>
<tr>
<td>Coronary Artery Disease</td>
<td>9 (39.1%)</td>
</tr>
<tr>
<td>Miocardial Infraction</td>
<td>5 (21.7%)</td>
</tr>
<tr>
<td>Heart Failure</td>
<td>10 (43.5%)</td>
</tr>
<tr>
<td>Atrial Fibrilation</td>
<td>5 (21.7%)</td>
</tr>
<tr>
<td>Stroke</td>
<td>2 (8.7%)</td>
</tr>
<tr>
<td>Chronic Kidney Disease</td>
<td>3 (13.0%)</td>
</tr>
<tr>
<td>Venous insufficiency</td>
<td>3 (13.0%)</td>
</tr>
<tr>
<td>Smoking (current/former/non)</td>
<td>2/14/7</td>
</tr>
<tr>
<td>Hgb</td>
<td>12.8</td>
</tr>
<tr>
<td>WBC</td>
<td>9.76</td>
</tr>
<tr>
<td>CRP</td>
<td>25.6</td>
</tr>
</tbody>
</table>
Quantitative change

2 $\times 10^7$ per patient

BEFORE     AFTER

1 $\times 10^7$ per patient

*P. agglomerans*

*P. putida*

*S. pasteurii*

*A. murdochii*

*P. mirabilis*

*E. coli*

*M. morgagni*

*P. mirabilis*

*K. oxytoca*

*P. harei*

*S. agalactiae*

*K. pneumoniae*

*P. aeruginosa*

*K. oxytoca*

*S. mercescens*

*S. aureus*
Bacteriota prior to PTA

- Staphylococcus aureus
- Echerichia coli
- Morganella morganii
- Pseudomonas spp.
- Enterobacter cloaceae
- Candida spp.
- Enterococcus faecalis
- Klebsiella spp.
- Proteus spp.
- Streptococcus agalactiae

Bacteriota 30 days post PTA

- Staphylococcus aureus
- Echerichia coli
- Morganella morganii
- Pseudomonas spp.
- Enterobacter cloaceae
- Candida spp.
- Enterococcus faecalis
- Klebsiella spp.
- Proteus spp.
- Streptococcus agalactiae

Qualitative change
Clinical change

<table>
<thead>
<tr>
<th>FACTOR</th>
<th>PRIOR</th>
<th>30 DAYS</th>
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</thead>
<tbody>
<tr>
<td>SINBAD</td>
<td>4,30</td>
<td>2,91</td>
</tr>
<tr>
<td>ABI</td>
<td>0,78</td>
<td>0,97</td>
</tr>
<tr>
<td>TBI</td>
<td>0,1</td>
<td>0,26</td>
</tr>
<tr>
<td>TCpO2</td>
<td>17,9</td>
<td>31,4</td>
</tr>
<tr>
<td>LDF</td>
<td>12,5</td>
<td>17,7</td>
</tr>
</tbody>
</table>

Wound clinical change after 30 days*

*Based on WIfI (Wound, Ischemia, and foot Infection) Classification System
Take home message

• The general clinical condition has improved
• Blood flow parameters have improved
• The ulcer microbiota does not undergo a significant qualitative change up to a month after endovascular procedures, despite the improvement of the general condition of the wound and the inclusion of antibiotic therapy
• Healing progress appears to be more dependent on the provision of appropriate healing conditions rather than altering the wound microbiota itself

• **Microbiota assessment should include both qualitative and quantitative**
• Nowadays the best clinical material is **tissue biopsy**
Circulating Pro- and Anti-angiogenic Factors in Cardiovascular Disorders

Guest Editor
Dr. Paweł Maga

Deadline
30 September 2023