**INTRODUCTION**

Inflammatory Bowel Disease (IBD) is a chronic inflammatory disease of the gastro-intestinal tract characterized by flares and remission. IBD patients have a higher risk for thrombosis (TE) compared to healthy controls (HC).

- General: IBD > HC: 3-fold
- During flare: IBD > HC: 16-fold

Do inflammatory bowel disease patients with a history of thrombosis have altered fibrinolysis parameters?

**METHODOLOGY**

- **Case-control study**
  - 113 HC (40% males, median age of 30 (IQR:25-42) years)
  - 84 IBD+TE (44% males, median age of 50 (IQR:37-65) years)
  - 118 IBD-TE (55% males, median age of 37 (IQR:26-53) years)

- **Analysis**
  - ELISA:
    - PAI-1 antigen (ag)
    - Active PAI-1
    - Total PAI-1/active PAI-1 ratio
    - Intact TAFI
    - Activation peptide (AP)-TAFI

- **Clot lysis profile**
  - 50% clot lysis time (CLT)
  - Area under the curve (AUC)
  - Amplitude

**RESULTS**

- **HC versus IBD patients**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>HC (n=113)</th>
<th>IBD (n=198)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender, % male</td>
<td>53%</td>
<td>51%</td>
<td>0.63</td>
</tr>
<tr>
<td>Age, mean (years)</td>
<td>30 (25-42)</td>
<td>50 (37-65)</td>
<td>P &lt; 0.0</td>
</tr>
<tr>
<td>Disease activity</td>
<td>53%</td>
<td>52%</td>
<td>NS</td>
</tr>
<tr>
<td>Platelets, median (IQR), x 10^9/l</td>
<td>290 (210-390)</td>
<td>265 (180-360)</td>
<td>P = 0.02</td>
</tr>
<tr>
<td>ADMA, median (IQR), ng/ml</td>
<td>2.45 (1.80-3.45)</td>
<td>2.80 (1.80-3.80)</td>
<td>P = 0.02</td>
</tr>
</tbody>
</table>

**IBD +TE versus IBD-TE**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>IBD +TE (n=84)</th>
<th>IBD -TE (n=118)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Platelets, median (IQR), x 10^9/l</td>
<td>305 (220-390)</td>
<td>250 (180-350)</td>
<td>P = 0.02</td>
</tr>
<tr>
<td>ADMA, median (IQR), ng/ml</td>
<td>2.05 (1.50-3.05)</td>
<td>2.50 (1.60-3.50)</td>
<td>P = 0.02</td>
</tr>
</tbody>
</table>

**DISCUSSION**

In conclusion, to the best of our knowledge this is the first study to compare fibrinolysis and clot lysis parameters in IBD patients with and without TE revealing that both the clot lysis profile and the ratio of active to total PAI-1 is altered in IBD patients with a history of TE.

However, to prove a direct cause-effect relation between the fibrinolysis and clot lysis parameters and the occurrence of TE, prospective studies are warranted.

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**Risk assessment proposal**

Low and Intermediate risk IBD patients

- Thromboprophylaxis recommended

Intermediate risk IBD patients

- Monitor disease activity

High risk IBD patients

- Hospitalized

Which IBD patients need thromboprophylaxis?

- Inflammatory Bowel Disease
- Comorbidities

Clot lysis profile

- AUC, 50% CLT and amplitude

SROC analysis of a threshold AUC to dichotomize 84 IBD patients from HC

**IBD specific risk factors**

- Active disease (Inflammatory)
- Polymyalgia rheumatica
- Oral contraceptives
- Smoking
- Previous episodes of TE
- Active/total PAI-1 ratio
- Presence of a trigger
- Disease activity
- Thyroid dysfunction
- Age
- Gender

**Recommended**

1. IBD patients should be advised about the risk for TE and the importance of compliance with anticoagulant treatment
2. Patients should stop smoking and decrease alcohol intake
3. Patients should be advised on additional risk factors such as smoking behaviour, the use of oral contraceptives and long-distance travel. In addition, physicians should consider a steroid sparing IBD therapy and in case anticoagulant prophylaxis is needed, low-molecular-weight-heparin, unfractionated heparin or fondaparinux can be given.