Examining the Link between Autoimmune Disease and Thromboembolic Events: A Delphi Panel Approach

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INTRODUCTION

In the United States, the estimated prevalence of immune-mediated diseases (IMD) is 5 to 8% of population1 and IMDs are the third-leading cause of illness and mortality.2

Individuals with an IMD have a higher risk of developing thromboembolic events (TEs).3

While studies have suggested IMD as an independent risk factor for developing TEs, the potential relationship between IMD and TEs is largely impacted by patient factors (e.g., age and sex), medical histories,4 as well as treatment options.5

While there is growing body of evidence connecting TEs in patients with an IMD, physician understanding and awareness of this relationship varies.

Consequently, a multidisciplinary panel of physicians was convened utilizing a modified Delphi approach, to gain understanding on the relationship between TEs and IMDs.

The primary objective of the panel was to assess areas of consensus regarding the IMDs most prone to TE as well as modifiable and unmodifiable factors that might exacerbate the risk of TEs.

METHODS

A modified version of the Delphi technique, a method for consensus-building that uses an iterative approach, was conducted among a group of physicians with expertise across multiple disciplines.

The modified Delphi panel consisted of four rounds of engagement based on IMD/TE relationships assessed from a rapid evidence literature review as background information prior to the panel (Table 1).

The multidisciplinary panel was recruited from a list of 143 healthcare providers that was generated by identifying lead and senior author publications containing specific scientific keyword searches (‘Venous Thromboembolism’, ‘VTE’, ‘Thromboembolism’, ‘JAK2’, ‘TAFI’, ‘STIC’) across 7 specialties: gastroenterology, neurology, rheumatology, cardiology, pulmonology, hematology/oncology.

RESULTS

• 63% of the 13 panels either agreed or strongly agreed (mean = 2.85, SD = 0.80) that all IMD patients were at a higher risk of TE compared to the general population.

• Systemic lupus erythematosus (SLE), ulcerative colitis (UC), Crohn’s Crohn’s disease, Rheumatoid arthritis (RA) had the highest risk of TE (Figure 1).

Figure 1. “For the following autoimmune disease patient populations, please indicate what you feel is the overall level of risk for the population as a whole” (n=13)

• JAKinibs and corticosteroids were identified as two therapeutic options that could benefit patients with IMDs in the treatment of thromboembolic events.

• Modifiable risk factors including smoking, obesity, and sedentary lifestyle.

Figure 2. “For the following patient characteristics, please indicate your perceived level of risk for autoimmune disease patients” (n=13)

Table 1. Modified Delphi Design

<table>
<thead>
<tr>
<th>Result of Engagement</th>
<th>Description</th>
</tr>
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<tbody>
<tr>
<td>Semi-structured interview</td>
<td>With readiness to adjust specific themes from expert panel members.</td>
</tr>
<tr>
<td>Delphi Questionnaire</td>
<td>The Delphi questionnaire was based on a prior panel discussion and emphasis on key questions.</td>
</tr>
<tr>
<td>In-person Panel Discussion</td>
<td>In-person discussion were facilitated by a Delphi workshop.</td>
</tr>
<tr>
<td>Virtual Semi-structured Interview</td>
<td>Semi-structured interview with a moderator to discuss results.</td>
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</tbody>
</table>

| In-Person Core Set | The Delphi panel consisted of a core set of stakeholders. |
| In-Person Virtual Panel | The virtual panel was facilitated by a Delphi workshop. |

| Consensus Statement Questionnaire | The Consensus Statement Questionnaire was used to evaluate the level of consensus among the panel.

Table 2. Modified Delphi Design

• Patients that had a prior DVT or PE were considered at the greatest risk for another TE. (Figure 2)

Figure 2. “For the following patient characteristics, please indicate your perceived level of risk for autoimmune disease patients” (n=13)

• JAKinibs and corticosteroids were identified as two therapeutic options that could benefit from close examination in light of potential TE risk. (Figure 3)

Figure 3. Ulcerative Collitis & Crohn’s Disease: Characterizing High-Risk Patients and Altering Clinical Approach

• Ulcerative colitis and Crohn’s disease are among the highest risk for TE among inflammatory bowel diseases.

• JAKinibs and corticosteroids were identified as two therapeutic options that could benefit patients with IMDs in the treatment of thromboembolic events.

• Modifiable risk factors including smoking, obesity, and sedentary lifestyle.

Figure 4. Treatment Modalities that Require Closer Evaluation in Light of TE Risk

• Patients with an IMD demonstrate an inherent higher risk of developing TE.

The panel of experts identified UC, Crohn’s disease, SLE, and RA as the top IMDs with the greatest risk of TE.

• Prior DVT and PE were both considered by most experts as characteristics that placed patients at a particularly high risk for TE.

JAKinibs and corticosteroids were two therapies that could benefit from additional research pertaining to their risk of TE.

DISCUSSION

Patients with an IMD demonstrate an inherent higher risk of developing TE.

The panel of experts identified UC, Crohn’s disease, SLE, and RA as the top IMDs with the greatest risk of TE.

Prior DVT and PE were both considered by most experts as characteristics that placed patients at a particularly high risk for TE.

JAKinibs and corticosteroids were two therapies that could benefit from additional research pertaining to their risk of TE.