Omalizumab as a Potential Treatment Option for Solar Urticaria in Patients Refractory to High Dose Antihistamines: A Case Series
Khaldon F. Abbas\textsuperscript{1}, Alexander Shusterman\textsuperscript{1}, Masum Patel\textsuperscript{1}, Gordon Sussman\textsuperscript{1,2}

\textsuperscript{1}Gordon Sussman Clinical Research Inc, Toronto, ON, Canada
\textsuperscript{2}Department of Medicine, University of Toronto, Toronto, ON, Canada

\textbf{Introduction}

- Solar Urticaria (SU) is a type of inducible Urticaria triggered by exposure to sunlight\textsuperscript{1,3}
- SU is a debilitating condition which significantly impacts the patients' quality of life. \textsuperscript{1,2}
- SU results in some patients completely avoiding outdoor activities. \textsuperscript{1}
- Symptoms are often controlled with antihistamines, but refractory in a subset of patients\textsuperscript{1,2,3}
- It has been reported that anti-IgE therapy with omalizumab can be an effective therapy option in patients diagnosed with SU. \textsuperscript{1,2,3}

\textbf{Aim}

- To evaluate the efficacy of omalizumab in SU patients refractory to high dose antihistamines.

\textbf{Methods}

- 7 SU patients who are refractory to antihistamines at 3 or 4 times the licensed dose and treated with omalizumab were evaluated for symptom improvement, and pre and post treatment Urticaria Activity Score (UAS-7).

\textbf{Results}

- All patients reported itchy red welts when exposed to sunlight.
- Mean age of patients was 37 years (range 20-49, M:F 3:4).
- All patients did not report improvement in symptoms control following high dose antihistamine therapy.
- Omalizumab therapy doses ranged from 150mg to 600mg q 4 weeks.
- 4 patients reported significant symptom improvement when exposed to sunlight following 1 month after initiating omalizumab therapy, 2 patients following 2 months, and 1 patient following 8 months.
- UAS-7 score went from 28-42 pre treatment, to 2-18 post treatment.
- UAS-7 score went back from 2 to 42 in one patient (patient 6) 6 months after discontinuing omalizumab.

\textbf{Table 1. Data and Summary of Patient Response to Omalizumab Treatment.}

<table>
<thead>
<tr>
<th>Patient</th>
<th>Age</th>
<th>Gender</th>
<th>Omalizumab dose</th>
<th>Time after onset of Omalizumab therapy to start of symptom improvement</th>
<th>Pre UAS-7 score</th>
<th>Post UAS-7 score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>32</td>
<td>F</td>
<td>450 mg q 4 weeks</td>
<td>2 months</td>
<td>42</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>F</td>
<td>300 mg q 4 weeks</td>
<td>1 months</td>
<td>34</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>44</td>
<td>M</td>
<td>300 mg q 4 weeks</td>
<td>2 months</td>
<td>28</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>49</td>
<td>F</td>
<td>150 mg q 4 weeks</td>
<td>1 months</td>
<td>36</td>
<td>10</td>
</tr>
<tr>
<td>5</td>
<td>45</td>
<td>M</td>
<td>600 mg q 4 weeks</td>
<td>8 months</td>
<td>30</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>42</td>
<td>M</td>
<td>150 mg q 4 weeks</td>
<td>1 months</td>
<td>42</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>29</td>
<td>F</td>
<td>300 mg q 4 weeks</td>
<td>1 months</td>
<td>42</td>
<td>8</td>
</tr>
</tbody>
</table>

\textbf{Conclusion}

- Omalizumab has the potential to be an effective alternative or as an additional therapy option for SU in patients who fail to respond to antihistamines.
- Randomized controlled clinical trials with larger sample size are needed to better ascertain the efficacy of omalizumab in Solar Urticaria patients.

\textbf{References:}