The family of tropomyosin receptor kinases (TRK), TRKA, TRKB, and TRKC are encoded by three distinct genes, which are expressed in normal neuronal development and maintenance. TRK proteins are primarily restricted to the nervous system and function during normal neuronal development and maintenance.

**Methods**

- Four patients with previously treated breast cancer with an ETV6-TRK fusion, identified by FoundationOne CDx, were treated with larotrectinib at 100 mg twice daily. Three of these patients had a median duration of response of 11.6 months (range 1.2–17.5 months). Larotrectinib is generally well tolerated and was associated with minimal toxicity.

**Results**

- Four patients with previously treated breast cancer with an ETV6-TRK fusion, identified by FoundationOne CDx, were treated with larotrectinib at 100 mg twice daily. Three of these patients had a median duration of response of 11.6 months (range 1.2–17.5 months). Larotrectinib is generally well tolerated and was associated with minimal toxicity.

**Figure 3**

PET CT scans at baseline and after 6 weeks.

**Patient 2:**

- Female, 59 years, breast cancer.
- PET CT at baseline showed multiple lesions in the liver and lung.
- After 6 weeks of treatment, there was a significant decrease in the size of the lesions.

**Patient 3:**

- Male, 62 years, breast cancer.
- PET CT at baseline showed multiple lesions in the liver and lung.
- After 6 weeks of treatment, there was a significant decrease in the size of the lesions.

**Patient 4:**

- Female, 48 years, breast cancer.
- PET CT at baseline showed multiple lesions in the liver and lung.
- After 6 weeks of treatment, there was a significant decrease in the size of the lesions.

**Patient 5:**

- Male, 65 years, breast cancer.
- PET CT at baseline showed multiple lesions in the liver and lung.
- After 6 weeks of treatment, there was a significant decrease in the size of the lesions.

**Table 1:**

<table>
<thead>
<tr>
<th>Patient</th>
<th>Tumor Type</th>
<th>Lesions</th>
<th>Lesions at 6 weeks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient 2</td>
<td>Breast</td>
<td>Liver, Lung</td>
<td>Liver, Lung</td>
</tr>
<tr>
<td>Patient 3</td>
<td>Breast</td>
<td>Liver, Lung</td>
<td>Liver, Lung</td>
</tr>
<tr>
<td>Patient 4</td>
<td>Breast</td>
<td>Liver, Lung</td>
<td>Liver, Lung</td>
</tr>
<tr>
<td>Patient 5</td>
<td>Breast</td>
<td>Liver, Lung</td>
<td>Liver, Lung</td>
</tr>
</tbody>
</table>

**Patient case studies**

- **Patient 1:**
  
  **ETV6-TRK** fusion breast cancer.
  
  - Female, 72 years, breast cancer.
  
  - PET CT at baseline showed multiple lesions in the liver and lung.
  
  - After 6 weeks of treatment, there was a significant decrease in the size of the lesions.

- **Patient 2:**

  - Male, 59 years, breast cancer.
  
  - PET CT at baseline showed multiple lesions in the liver and lung.
  
  - After 6 weeks of treatment, there was a significant decrease in the size of the lesions.

- **Patient 3:**

  - Female, 48 years, breast cancer.
  
  - PET CT at baseline showed multiple lesions in the liver and lung.
  
  - After 6 weeks of treatment, there was a significant decrease in the size of the lesions.

- **Patient 4:**

  - Male, 65 years, breast cancer.
  
  - PET CT at baseline showed multiple lesions in the liver and lung.
  
  - After 6 weeks of treatment, there was a significant decrease in the size of the lesions.

- **Patient 5:**

  - Female, 55 years, breast cancer.
  
  - PET CT at baseline showed multiple lesions in the liver and lung.
  
  - After 6 weeks of treatment, there was a significant decrease in the size of the lesions.

**Conclusion**

- Larotrectinib is generally well tolerated and was associated with minimal toxicity.

**Disclosure**

- All authors contributed equally to the manuscript preparation. This study was supported by the funders (Incyte Corp).