Safety of GH in Paediatrics: The GeNeSIS Prospective Observational Study Experience Between 1999 and 2015 (NCT01088412)


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RESULTS: Type 2 diabetes

The SIR (95% CI) for type 2 diabetes for all follow-up years was 3.8 (2.2–6.0); the majority of affected patients had risk factors for diabetes (Table 3).

Table 3: Type 2 diabetes and associated standardised incidence ratio overall and by diagnosis group

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>N</th>
<th>PY</th>
<th>Observed deaths</th>
<th>Expected deaths</th>
<th>SIR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>All</td>
<td>21106</td>
<td>91582</td>
<td>42a</td>
<td>69.4</td>
<td>0.6 (0.4–0.8)</td>
</tr>
<tr>
<td>GH deficiency (GHDIH)</td>
<td>13301</td>
<td>57968</td>
<td>28</td>
<td>47.3</td>
<td>0.6 (0.4–0.9)</td>
</tr>
<tr>
<td>Idiopathic GHDIH</td>
<td>10423</td>
<td>42060</td>
<td>3</td>
<td>34.4</td>
<td>0.8 (0.5–0.9)</td>
</tr>
<tr>
<td>Organic GHDIH</td>
<td>2830</td>
<td>14665</td>
<td>24</td>
<td>12.9</td>
<td>1.1 (0.8–1.5)</td>
</tr>
<tr>
<td>OGHD – neoplasms</td>
<td>890</td>
<td>4258</td>
<td>16</td>
<td>4.3</td>
<td>3.7 (2.6–4.8)</td>
</tr>
<tr>
<td>OGHD – benign neoplasms</td>
<td>285</td>
<td>1445</td>
<td>2</td>
<td>1.6</td>
<td>1.2 (0.4–3.2)</td>
</tr>
<tr>
<td>OGHD – malignant neoplasms</td>
<td>530</td>
<td>2504</td>
<td>14c</td>
<td>2.4</td>
<td>5.9 (2.9–9.9)</td>
</tr>
<tr>
<td>OGHD – non-neoplastic</td>
<td>1937</td>
<td>10597</td>
<td>8</td>
<td>8.5</td>
<td>0.9 (0.4–1.9)</td>
</tr>
<tr>
<td>Idiopathic OGHD</td>
<td>2868</td>
<td>10488</td>
<td>1</td>
<td>6.6</td>
<td>0.2 (0.0–1.9)</td>
</tr>
<tr>
<td>Idiopathic OGHD</td>
<td>1222</td>
<td>5340</td>
<td>2</td>
<td>3.9</td>
<td>0.9 (0.5–1.8)</td>
</tr>
</tbody>
</table>

| Abbreviations: CI = Confidence interval; PY = person-years; SIR = standardized incidence ratio; * = lists countries with no incident cases in the table but are included in the overall SIR.

DISCUSSION

There was no increased risk for all-cause primary cancers in GH-treated patients compared to general population cancer registries, similar to findings from other studies (4, 5). The rate of ICT second neoplasms was low, aligning with recent data from the Childhood Cancer Survivor Study showing no increased risk for such tumours in GH-treated patients (19). Many studies showed no increased risk for ICT recurrences in GH-treated vs non-treated patients (20). The GeNeSIS craniopharyngioma recurrence rate is lower than published rates of 17–36% (21). Type 2 diabetes was not an increased risk in GH-treated patients, but most reported risk factors.

There was no increased mortality risk overall or in any patient group, except for those with history of cancer, aligning with published data from other SAGhE countries (22).

Similarly, no cases of haemorragic stroke were observed in patients without significant stroke risk factors. Limitations related with the small data incidence in patients during GH treatment only, the follow-up per patient was relatively short and low numbers of event cases may hinder interpretation.

CONCLUSIONS

No new safety signals were observed in GeNeSIS in GH-treated patients.

Compared to general population registries, GH-treated patients in GeNeSIS had:

- no increased risk for all-cause primary cancers
- increased risk for type 2 diabetes, but the majority had diabetes risk factors
- no increased risk of early mortality, except in patients with previous malignancy.

Safety findings from the French SAGhE cohort were not observed in GeNeSIS.

Per GH product labelling, glucose monitoring in GH-treated patients with diabetes risk factors is recommended, and patients with ICT/cancer history should be monitored for recurrences and side effects.

REFERENCES:
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