Alpha-fetoprotein producing gastric cancer (AFP-GC) has been reported all over the world, but mostly in Asia. The reported incidence was 6.63% and 1.5–3% in China and Japan, respectively. To my knowledge, there was only one case reported in Taiwan. Herein, I wish to share my experience of the six cases of AFP-GC that I encountered during my career. The brief clinical data of these cases are summarized in Table 1.

These six patients were all male, with their ages ranging from 58 years to 82 years. The serum levels of AFP ranged from 174 ng/mL to 74,904 ng/mL. All of them, except the first patient, had lymph node and liver metastasis at the time of diagnosis. Five patients died within 6 months of diagnosis. One patient who underwent gastrectomy was living well 2 years after surgery.

The morphological spectrum of AFP-GC includes hepatoid adenocarcinoma, intestinal type, and signet ring cell type. The criteria for diagnosing AFP-GC depend on positive staining of the primary lesion by immunohistochemical methods.

AFP-GC has been considered as having an unfavorable long-term survival rate due in part to the higher incidence of liver metastasis and lymphovascular invasion. The cellular and molecular mechanisms responsible for its poor prognosis are not clearly understood. An early report indicated that AFP has a suppressive effect on lymphocyte transformation. Another report indicated that AFP can enhance proliferative activity and increase angiogenesis due to positive expression of vascular endothelial growth factor (VEGF). In a study in 2000, it was found that hepatocyte growth factor (HGF) and c-met expression was higher in AFP-GC than that in AFP negative gastric cancer. Through the HGF and c-met pathway, AFP promoted tumor growth.

It has been well documented that AFP-GC is quite different from the usual type of gastric cancer. It is justified

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**Table 1** Clinical data of six patients with AFP-GC.

<table>
<thead>
<tr>
<th>Case number/age/sex</th>
<th>Tumor site and procedure</th>
<th>Serum level of AFP (ng/mL)</th>
<th>Lymph node/ hepatic metastasis</th>
<th>Follow up</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/78/M</td>
<td>Cardia, gastrectomy</td>
<td>490</td>
<td>No</td>
<td>Alive with no metastasis</td>
</tr>
<tr>
<td>2/59/M</td>
<td>Body, Bx</td>
<td>74,901</td>
<td>Yes</td>
<td>DOD</td>
</tr>
<tr>
<td>3/79/M</td>
<td>Antrum, Bx</td>
<td>35,350</td>
<td>Yes</td>
<td>DOD</td>
</tr>
<tr>
<td>4/61/M</td>
<td>Pylorus, Bx</td>
<td>1306</td>
<td>Yes</td>
<td>DOD</td>
</tr>
<tr>
<td>5/80/M</td>
<td>Body, Bx</td>
<td>174</td>
<td>Yes</td>
<td>DOD</td>
</tr>
<tr>
<td>6/82/M</td>
<td>Pylorus, Bx</td>
<td>23,041</td>
<td>Yes</td>
<td>DOD</td>
</tr>
</tbody>
</table>

AFP-GC = alpha-fetoprotein producing gastric cancer; BX = Biopsy; DOD = died of disease.

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to order serum AFP on all patients with gastric cancer because of its prognostic significance. To develop effective multimodal therapy against AFP-GC, a better understanding of the characteristics of AFP-GC at the cellular and molecular levels is important.

References


