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Ohara Pharmaceutical Co., Ltd.

Recombinant Chimeric Monoclonal Antibody "Dinutuximab (OP-08)" Receives Orphan Drug Designation for Neuroblastoma from MHLW

On August 17, 2020, Ohara Pharmaceutical Co., Ltd. (Head office: Koga City, Shiga Prefecture; President: Seiji Ohara) received Orphan Drug Designation from the Ministry of Health, Labour and Welfare (hereinafter "MHLW") for Dinutuximab (recombinant) (hereinafter "OP-08") as a recombinant chimeric monoclonal antibody, with "neuroblastoma" as an expected indication.

Neuroblastoma refers to a type of childhood solid tumor where cells originating in neural crest cells in the fetal period become cancerous. It is the third most common cancer among children- behind only leukemia and brain tumors. The peak age of onset are 0 and 3 years.[1)] This disease is difficult to detect in the early stage, because it remains asymptomatic while the tumor is small. It is detected after the tumor has progressed, marked by symptoms such as abdominal mass/abdominal distention.

Neuroblastoma is classified into three risk groups (Low, Intermediate and High), based on five prognostic factors: stage, age, MYCN Amplification, histopathology, and DNA index (ploidy).[2)] While the cure rate of patients in the Low to Intermediate risk groups exceed 90%, about 60% of all patients are classified in the High risk group with the five-year survival rate 50% or lower. As a result, neuroblastoma is considered to have the poorest prognosis among other childhood solid tumors.[3)]

OP-08 reacts specifically with disialoganglioside (GD2), an antigen which is highly enriched in human tumors cell. The drug was approved for treatment of high-risk neuroblastoma in March 2015 in the United States and in November 2018 in Canada. Therefore, there is high hope for early development of OP-08 as a new therapeutic drug in Japan.

It is estimated that about up to 160 patients are diagnosed with neuroblastoma every year in Japan, with about up to 3,300 patients in total.

We will continue to further endeavor to provide OP-08 to patients as far as possible.

[References]
1）日本小児血液・がん学会作成　小児がん診療ガイドライン 2016 年版
2）Cohn SL., et al. The International Neuroblastoma Risk Group (INRG) Classification System: An INRG Task Force Report. J Clin Oncol. 2009, Vol. 27, No. 2, p. 289-297.
3）七野 他. 神経芽腫に対する集学的治療法：化学療法を中心に. 小児がん. 2010, Vol. 47, No.1, p. 046-052.

[About OP-08]
OP-08 is a recombinant chimeric monoclonal antibody, and is a glycoprotein with the molecular weight of approx. 150,000, consisting of a variable region (mouse anti-Ganglioside-GD2 monoclonal antibody) and a constant region (human IgG1).
This drug specifically interacts with the antigen GD2 that frequently expresses in human neuroectodermal tumors (such as neuroblastoma), and provokes the cytolysis of neuroblastoma cells through the antibody-dependent cell-mediated cytotoxicity (ADCC) effect and the complement-dependent cytotoxicity (CDC) effect.
In the U.S. and Canada, OP-08 was approved for the following indication and marketed as Unituxin® by United Therapeutics Corporation of the U.S.: “Unituxin (dinutuximab) is indicated, in combination with granulocyte-macrophage colony-stimulating factor (GM-CSF), interleukin-2 (IL-2) and 13-cis-retinoic acid (RA), for the treatment of pediatric patients with high-risk neuroblastoma who achieve at least a partial response to prior first-line multiagent, multimodality therapy.” Ohara is developing OP-08 under an exclusive license agreement with United Therapeutics Corporation.
UNITUXIN is a registered trademark of United Therapeutics Corporation.

[What are orphan drugs?]
Orphan drugs refer to drugs which have been reviewed and designated by the MHLW as drugs for diseases with less than 50,000 patients in Japan and have high unmet medical needs.

[About Ohara Pharmaceutical Co., Ltd.]
Ohara Pharmaceutical Co., Ltd. is one of the unique Japanese pharmaceutical companies that focus on the development and distribution of orphan drugs mainly in the field of childhood cancer treatment as well as generic drugs taking the prevention of medical accidents into consideration. In the Midterm 3-year plan that started in FY2018, Ohara is committed to addressing medical issues under the theme, “To Challenge unmet medical needs,“ applying the catch-phrase, ”Challenge 2020.“ Ohara is planning to further expand these activities into emerging countries mainly in Asia as well as other regions.