

January 28, 2021

ONO Submits Supplemental Application for Approval of Opdivo® (Nivolumab) to Expand the Use for Treatment of Pediatric Patients with Recurrent or Refractory Classical Hodgkin Lymphoma in Japan

Ono Pharmaceutical Co., Ltd. (Osaka, Japan; President, Representative Director, Gyo Sagara; “ONO”) announced today that ONO has submitted a supplemental application for Opdivo® (generic name: nivolumab) Intravenous Infusion (“Opdivo”), a human anti-human programmed death-1 (PD-1) monoclonal antibody in Japan, to expand the use for the treatment of pediatric patients with recurrent or refractory classical Hodgkin lymphoma, for a partial change in approved items of the manufacturing and marketing approval.

This application is based on the result of the investigator-initiated clinical trial (NCCH1606, Study abbreviation: PENGUIN), conducted at the National Cancer Center Hospital, in patients with refractory malignant solid tumors and Hodgkin lymphoma (malignant lymphoma) that are resistant to the standard treatment (after two or more chemotherapy regimens) among cancer patients of the childhood and AYA (adolescent and young adult) generation.

Hodgkin lymphoma (HL) is a localized or diffuse malignant cell cancer derived from the lymphatic system. It is estimated that there are approximately 1,720 patients with HL including about 70 pediatric HL patients annually in Japan. The treatment for pediatric HL patients is initially conducted with chemotherapy. When patients relapse or are treatment-resistant, the treatment will be shifted further to chemotherapy or brentuximab vedotin, etc. However, as pediatric patients with recurrent or refractory HL have a poor prognosis, new treatment options are expected. Once the application has been approved, Opdivo is expected to become a new treatment option for this pediatric population.

PENGUIN study

PENGUIN study is an investigator-initiated Phase I clinical study, evaluating the safety, pharmacokinetics and exploratory efficacy of Opdivo, conducted at the National Cancer Center Hospital, in patients with refractory malignant solid tumors and Hodgkin lymphoma that are resistant to the standard treatment (after two or more chemotherapy regimens) among cancer patients of the childhood and AYA generation. In addition, pediatric patients were enrolled as subjects in this study, because the high efficacy of Opdivo has been confirmed in adult patients with classical Hodgkin lymphoma in clinical studies and the similar efficacy can be expected in pediatric patients. The primary outcome endpoints is a frequency of adverse events equivalent to dose-limiting toxicity. The key secondary outcome endpoints are overall survival, progression-free survival, overall response rate, etc.

About Opdivo

Opdivo is a programmed death-1 (PD-1) immune checkpoint inhibitor that is designed to uniquely harness the body’s own immune system to help restore anti-tumor immune response by blocking the

interaction between PD-1 and its ligands. By harnessing the body's own immune system to fight cancer, Opdivo has become an important treatment option across multiple cancers since the approval for the treatment of melanoma in Japan in July 2014. Opdivo is currently approved in more than 65 countries, including Japan, South Korea, Taiwan, China, the US and European Union.

In Japan, ONO launched Opdivo for the treatment of unresectable melanoma in September 2014. Thereafter, Opdivo received an approval for additional indications of unresectable, advanced or recurrent non-small cell lung cancer in December 2015, unresectable or metastatic renal cell carcinoma in August 2016, relapsed or refractory classical Hodgkin lymphoma in December 2016, recurrent or metastatic head and neck cancer in March 2017, unresectable advanced or recurrent gastric cancer which has progressed after chemotherapy in September 2017, unresectable advanced or recurrent malignant pleural mesothelioma which has progressed after chemotherapy in August 2018, and microsatellite instability high (MSI-High) unresectable advanced or recurrent colorectal cancer that has progressed following chemotherapy and unresectable advanced or recurrent esophageal cancer that has progressed following chemotherapy in February 2020.

In addition, ONO is conducting clinical development program including esophago-gastric junction cancer, hepatocellular carcinoma, glioblastoma, urothelial cancer, ovarian cancer, bladder cancer, pancreatic cancer, biliary tract cancer, prostate cancer, etc.

About the ONO and Bristol-Myers Squibb Collaboration

In 2011, through a collaboration agreement with Bristol-Myers Squibb (BMS), ONO granted BMS its territorial rights to develop and commercialize Opdivo globally except in Japan, South Korea and Taiwan, where ONO had retained all rights to Opdivo except the US at the time. In July 2014, ONO and BMS further expanded the companies' strategic collaboration agreement to jointly develop and commercialize multiple immunotherapies – as single agent and combination regimens – for patients with cancer in Japan, South Korea and Taiwan.

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