Migration towards biologic drugs in cancer therapy is encouraging first-in-class innovation in the laryngeal cancer pipeline

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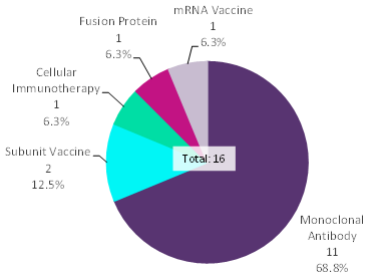
Cancers of the larynx are a group of diseases that affect the vestibular system and are often found near the vocal cords or the top of the trachea. Most laryngeal cancers are squamous cell carcinomas and symptoms include hoarseness, a sore throat, persistent cough, dysphagia, and halitosis. Statistics from the National Cancer Institute (a constituent of the National Institutes of Health) show that the relative five-year survival rate of laryngeal cancer in the US is 60.6%, according to data collected between 2010 and 2016.

Although laryngeal cancer is rare, the risk factors are common in society and include cigarette smoking, consumption of alcohol, papillomaviridae infections, and inhalation of paint fumes and chemicals used in factories or other industrial settings. Treatment decisions are made by a combination of oncologists and otorhinolaryngologists. Therapeutic interventions include chemotherapy, radiation, and surgical procedures such as a tracheotomy or a laryngectomy. However, the risk of carcinogenesis following radiation and the presence of inoperable neoplasms means that more pharmacotherapeutic treatment options are needed for this indication.

Currently, antineoplastic agents used to treat laryngeal cancer include cisplatin, fluorouracil, capecitabine, bleomycin, carboplatin, paclitaxel, and gemcitabine. The ototoxic and nephrotoxic properties of some of these drugs coupled with potential side effects such as electrolyte imbalances, emesis, shortness of breath, lightheadedness, and chest pain mean that pharmacologic therapies with improved safety profiles are needed to manage patients who need long-term care. Innovation in the pipeline for laryngeal cancer has led to the emergence of five different types of biologics being developed by pharmaceutical companies around the world.

Figure 1: Biologic Drugs in Clinical Development for Laryngeal Cancer by Molecule Type, October 2020.



Credit: GlobalData, Pharma Intelligence Center (Accessed 2 November 2020).

First-in-class products are defined as products with a molecular target or mechanism of action not found in any approved products globally. Out of the 11 monoclonal antibodies in clinical development for the treatment of laryngeal cancer, five products are first-in-class. One of these drugs, AstraZeneca's monalizumab has demonstrated antineoplastic activity by achieving efficacy endpoints in Phase II clinical trials involving patients with head and neck cancer and refractory, relapsed, or treatment-naïve chronic lymphocytic leukaemia. The majority (80%) of the first-in-class monoclonal antibodies are currently in clinical trials. Support for innovative approaches to drug development has coincided with an increased approval rate for first-in-class therapies across the pharmaceutical industry in both proportional and absolute terms.

A key challenge in this therapy area will be making sure that patients from disadvantaged backgrounds are also able to access these drugs, given that biologic drugs are typically expensive, and disparities in cancer care for people of low socioeconomic status are directly linked to poor physical and sociological outcomes such as increased mortality and financial strain.