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Editorial

Head and Neck Cancer: Is there any Future in Treatment?

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Head and neck cancer is the sixth most prevalent type of cancer globally, affecting approximately 900,000 individuals annually [1]. In the United States, around 67,000 cases are diagnosed each year. It is projected that by 2030, this number will increase by 30%, reaching an estimated 1.08 million cases per annum.

Head and neck cancers represent a diverse group of malignancies characterized by their aggressive nature. While the incidence rate of head and neck cancer (HNC) may appear low due to its classification into several subsites—such as the oropharynx, nasopharynx, hypopharynx, larynx, salivary glands, and lip and oral cavity—with separate rates being reported, the combined incidence rate ranks fifth among all cancers in men. Approximately 90% of these cancers are squamous cell carcinomas (HNSCC). Laryngeal and oral cancers are frequently associated with tobacco consumption and alcohol use, whereas pharyngeal cancers are commonly linked to human papillomavirus (HPV) infection, particularly HPV-16. HNSCC can be further categorized as either HPV-negative or HPV-positive. The HPV vaccine prevents infection with the virus, which reduces the risk of developing associated cancers, such as head and neck cancer. It is recommended for people ages 9 to 26 and adults ages 27 to 45. It is most effective before the onset of sexual activity but may also be useful later [2].

Treating HNSCC is difficult, with a low 5-year survival rate due to late diagnosis, recurrent metastasis, relapses, and therapy resistance [2]. Advanced HNC, excluding tonsil cancer, has a poor prognosis with around a 50% 5-year survival rate, and recent years show no improvement. Improving advanced HNC treatment requires two approaches: enhancing existing methods and developing new ones.

The current treatment approach for advanced head and neck cancer (HNC) involves either singular or combined modalities of surgery, systemic therapy, and radiation therapy (RT). The recently published National Comprehensive Cancer Network guidelines categorize advanced HNC by subsite and recommend suitable treatment methods accordingly. Typically, there is no distinct preference between the initial treatment options, which may include surgery, concurrent systemic therapy/RT, definitive RT, induction chemotherapy, or clinical trials.

Recent research prioritizes new treatments for advanced head and neck cancer. Key areas include anti-cancer drugs, targeted therapies in precision medicine, and next-generation sequencing. The focus is on precision oncology and novel therapies.

Neoadjuvant therapy

The application of neoadjuvant chemotherapy and immune checkpoint inhibitors is increasingly recognized, yielding encouraging results in tumor reduction and enhancing patient prognosis [3].

CAR-T cell therapy, known for its effectiveness in achieving remission in hematologic cancers, is being studied for its application in treating HNSCC. However, issues such as antigen loss and immunosuppression within the tumor microenvironment must be resolved [4].

Targeted therapies, like immunotherapy and cancer stem cell therapy, are crucial for treating distant metastatic HNSCC. Understanding the genetic and epigenetic landscape of HNSCC is essential for creating effective therapies with minimal toxicity and high specificity [1].

Combination therapies, including CAR T-cells with immune checkpoint inhibitors and other treatments, have the potential to improve therapeutic outcomes. Innovations such as dual-targeted CAR T-cells and CRISPR modifications aim to enhance efficacy and address treatment resistance. These advancements signify progress in the management of head and neck cancers, offering promises for improved patient outcomes and quality of life [2,3].

Conquering advanced HNC requires substantial effort and time because conventional treatments have not significantly improved survival rates, so progressive enhancements are necessary. Continued research and new technologies or drugs will bring us closer to overcoming advanced HNC.

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