1 Oral Cancers: An Overview

Cancer is a group of diseases characterized by uncontrolled growth and caused by external (tobacco, chemicals, radiation, and infectious organisms) as well as internal factors (inherited mutations, hormones, immune conditions, etc.).[1,2] It is one of the most common causes of morbidity and mortality today, with more than 10 million new cases and more than 6 million deaths each year worldwide. More than 20 million people around the world live with a diagnosis of cancer, and more than half of these live in the developing countries. Cancer is responsible for about 20% and 10% of all deaths in high- and low-income countries, respectively. It is projected that by 2020 there will be 15 million new cancer cases and 10 million cancer deaths each year.[3]

1.1 Epidemiology

Oral cancers are part of a group of cancers commonly referred to as head and neck cancers, and they comprise about 85% of that category. Oral squamous cell carcinoma (OSCC) ranks as the 15th most common cancer in the world and 10th most frequent in males.[1] According to a recent report in the year 2014, around 45,750 Americans will be diagnosed with oral or pharyngeal cancers leading to 8650 deaths. Incidence rates are high among males in south central Asia and among females in eastern and central Europe.[1] The highest incidence rate is observed in the Melanesian region (region extending from the western side of the eastern Pacific to the Arafura Sea, north and northeast of Australia; see Fig. 1). The Indian subcontinent accounts for one-third of the world's burden. In the US population, oral cavity cancer represents about 3% of all malignancies; however, it accounts for over 30% of all cancers in India. The age-adjusted rates of oral cancer vary from over 20 in India and 10 in the United States to less than 2 per 100,000 in the Middle East.[1,4]

1.2 Etiolology

The major risk factors for oral cancer include tobacco, alcohol, and viral infections. Tobacco-related cancers account for nearly 50% and 25% of all cancers among men and women, respectively. There are predictions that there will be a 7-fold increase in tobacco-related cancer morbidity by 2025. Further, there may be an overall increase by 20% of cancer deaths related to tobacco use by the year 2020.[5] The estimated risk for developing oral cancer in smokeless tobacco users is about two to four times higher as compared to non-users.[5] It is estimated that about 50% of the oral cancer cases in southeast Asia can be attributed to the use of smokeless tobacco leading to 50,000 new cases. There is a strong association between high alcohol consumption and oral cancer. Studies have shown that increased alcohol consumption is associated with cancers at various sites such as the pharynx, larynx, and esophagus.[6] Alcohol consumption of more than