Odontogenic tumors are a heterogeneous group of lesions arising from the odontogenic apparatus or its remnants. They may originate from the epithelial and/or ectomesenchymal odontogenic tissues, exhibiting varying degrees of inter-tissue interaction. Odontogenic tumors comprise a group of tumors whose severity ranges from simple cyst-like behavior to hamartomatous lesions to frank metastasizing malignancies.

Pathogenesis of all odontogenic tumors is though attributed to odontogenic remnants and/or cell rests, the varied biological behavior of the tumors in this group is not fully understood. The lesions included in the current WHO classification are diagnosed mainly based on anatomic considerations, dentigerous relationship or in the histomorphological similarities. This is attributed to the lack of specific markers to confirm the odontogenic origin of these tumors. The question that always intrigued researchers is the fact that odontogenic tumors occur in some though odontogenesis is a standard biological process in all individuals. Only small percentage of them develops odontogenic cysts and tumors when odontogenic rests are present in almost all individuals. What triggers this change in the odontogenic cells and the rest cells in these individuals? The questions that follow this observation are as follows: (1) Is there a genetic susceptibility shown by some population? (2) What is the role of epigenetic factors? (3) Does it have demographic variations? (4) Will genetic studies help us find answers to it? (5) Will this help in prevention or treatment of these lesions?

There are numerous works on the molecular markers expressed in odontogenic tumors. These markers and genes that they are related to should help us find the genetic cause and address it at an early stage. For premalignant and malignant diseases of the head and neck region or oral cavity in particular we have screening tests in place. These screening tests help in early diagnosis, early treatment, and hence better prognosis of these lesions. Similar screening tests or methods for identification of susceptibility patterns for odontogenic tumors are needed. This can be achieved by extensive research in this direction.

The introduction of dermatoglyphics and chielectroscopic patterns which are genetically determined should help us in screening these susceptible individuals if we establish a susceptibility pattern that’s unique to these patients. The periapical tissues in the region of third molars during extractions can be examined under microscope for any rests, their patterns, etc. And also establish if having rests increases the risk of tumor development or not. In this special issue of odontogenic tumors, journal of clinical, and research investigations brings various aspects of odontogenic tumors to our readers.

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