

Genetic and Biochemical Changes in the Mandibular Condylar Cartilages a Function of Administration of Growth Factors and Mandibular Advancement

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Since mandibular condyle plays a significant role in the development form and function of oro-facial complex, it has received special attention in orthodontics. Accordingly, besides mandibular advancement, condylar growth modification is induced by growth factors also. Most of the studies in this regard have used either histological, histomorphometric, immuno-histomorphometric, biochemical or auto-radiographic methods as a diagnostic tool to evaluate the growth at the condyle or detected increased expression of some growth factors/biomarkers of mandibular condylar cartilage (MCC) growth. Although, these studies have dealt with condylar growth by providing valuable leads at a cellular level, several questions have remained unanswered and which could be answered only on a genetic level, elucidated by cellular studies, quantified by molecular markers and validated by statistical analysis. Expression of Vascular endothelial growth factor (VEGF), a potent regulator of neo-vascularization, was observed in the condyles and glenoid fossa of the growing rats. Decorin (DCN) plays an essential role in the development, texture, integrity, maintenance and functions of virtually all tissues, including MCC. It is postulated that Matrix-Gla-Protein (MGP) has a regulatory role in chondrocytes, cartilage and mineralization of skeletal as well as dental tissues. Thus the present study has precisely attempted to evaluate the genetic factors i.e. VEGF, SOX-9, MMP-1, MMP-13, DCN and MGP genes as markers of condylar growth in young rabbits as a function of epigenetic factors like mandibular anterior repositioning appliances with and without the administration of growth factors (TGF- β and IGF-1).

Biography:

Dr. Amol Patil currently working as Professor /Post-graduate Guide and PhD Guide at Bharati Vidyapeeth University Dental College & Hospital, Pune and he have been awarded as "Best Scientist Award" 2016 at Bharati Vidyapeeth University. He is one of the few who has completed his PhD in Orthodontics. He was a *Gold Medalist* in MDS Orthodontics. He has a keen interest in research because of which he pursued his PhD and has total 34 publications out of which 10 are international with high impact factor (4.586). He is Reviewer in 17 international journals including AJO, EJO, WJO etc and on board of advisors of 4 international journals. He has been an invited speaker to various international conferences related to basic sciences (1st World molecular and cell biology conference, USA, 2012; Cell Biology Conference, China, 2014; Epigenetics and Biotechnology Conference 2014); 50th Indian Orthodontic Conference, Hyderabad and recently presented a research paper at 115th AAO conference, San Fransisco. He has presented various papers in national and international conferences for which he has been awarded the best paper awards too. He has keen interest in growth, genetics and basic research.