

DBT-ILS scientists studying genetic aspects of hearing disability



New Delhi, July 02: Hearing loss is one of the most common sensory disorders worldwide and an often-neglected condition in India. It can be present at birth or be acquired during one's lifetime due to various genetic and environmental factors. It affects speech development, language acquisition and education in children. It decreases opportunities in personal, professional and social development leading to social confinement and psychological inferiority complex of the patient.

According to WHO, it is estimated that 5% of the global population i.e. 466 million people are affected from hearing loss in which 34 million are children. Recent statistical data also suggests that by 2050 over 900 million people will be affected by hearing impairment.

Scientists at the Human/Medical Genetic Laboratory of the Department of Biotechnology's Institute of Life Sciences, Bhubaneswar, are involved in studying the genetics of hearing disorders. The laboratory focused on three major hearing disorders, i.e. Otosclerosis (OTSC), Congenital Hearing Loss (CHI), and Otitis media (OM).

Along with genetics, they are also trying to find out the complimentary assisting factors like epigenetics and immunogenetics of these diseases. They are trying to unravel the genetic

mysteries implicated in the pathophysiology of these illnesses by collating patients and normal healthy individuals by linkage analyses, candidate gene/genome wide association studies, and mutation analyses.

For the first time the research group identified the genetic association, inheritance of mutations and altered gene expression of TGFB1 contributing towards otosclerosis susceptibility. Other genetic variations have also been pointed out as potential risk factors for OTSC development. Functional characterization for mutations/associated variants using zebrafish models are part of the upcoming studies.

Contact details:

Dr P.V Ramchander (Scientist E, ILS) Dr Mamoni Dash (Communication Officer, ILS)

Link: <https://www.ils.res.in/>

Phone: 91-674-2304283, 2301476, 2301460, 2300137, 2301219