



Category: Metagenomics

Next generation sequencing of bacteria to control Ciprofloxacin and amoxycylav antibiotic resistance in ear infections

Mahesh Chandra Sahu^{1*} and Santosh Kumar Swain²

¹Directorate of Medical Research, IMS & Sum Hospital, Siksha 'O' Anusandhan University, K-8, Kalinga Nagar, Bhubaneswar 751003, Odisha, INDIA

²Department of Otorhinolaryngology, IMS and Sum Hospital, Siksha 'O' Anusandhan University, K-8, Kalinga Nagar, Bhubaneswar 751003, Odisha, INDIA

Presenting and *Corresponding author: mchsahu@gmail.com

Abstract

Long standing ear infection or chronic suppurative otitis media (CSOM) is the inflammation of middle ear cleft persistent or intermittent infected ear discharge from a non-intact perforated tympanic membrane at least for 3 months of duration. Commonly ciprofloxacin and amoxycylav are used as safe and popular antibiotics for CSOM. But unfortunately the antibiotics become resistant due to the over use or miss use. To know the culture sensitivity of antibiotic pattern, it requires minimum 5 days and after getting the result, the clinician may or may not prescribe these antibiotics. But it is a time consuming method. The recent improvements in sequencing technologies, next generation sequencing (NGS) are positioned to become an essential tool in the control of antibiotic resistance, a major threat in modern healthcare. NGS has already found numerous applications in this area, ranging from the development of novel antibiotics and diagnostic tests through to antibiotic stewardship of currently available drugs via surveillance and the elucidation of the factors that allow the emergence and persistence of resistance. Numerous techniques can be developed in the value of NGS as a tool for infection control caused by bacteria as a primary diagnostic tool to detect ciprofloxacin and amoxycylav antibiotic resistance. However, appropriate data analysis platforms will need to be developed before routine NGS can be introduced on a large scale. The result will reveal the early detection of the efficacy of these antibiotics (ciprofloxacin and amoxycylav) with the clinic-microbiological profile of CSOM and to analyze the susceptibility pattern of the aerobic bacterial isolates, so that an antibiotic policy can be formulated for CSOM, for better patient management.

Citation: Sahu, M.C. and Swain, S.K. Next generation sequencing of bacteria to control Ciprofloxacin and amoxycylav antibiotic resistance in ear infections [Abstract]. In: Abstracts of the NGBT conference; Oct 02-04, 2017; Bhubaneswar, Odisha, India: *Can J biotech*, Volume 1, Special Issue (Supplement), Page 269. <https://doi.org/10.24870/cjb.2017-a253>