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Medians for maternal serum markers of fetal abnormalities: progress in prenatal screening

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In developed countries, prenatal screening and diagnosis of Down's syndrome (DS) through maternal serum screening (MSS) has been established. Screening identifies apparently healthy people who may be at increased risk of a disease or condition, enabling earlier treatment or better-informed decisions. Maternal serum screening is a valuable tool in prenatal management and is used to identify pregnancies at high risk for certain birth defects and chromosomal abnormalities. 50 samples of each week between weeks 15 and 18 of pregnancy during the second trimester were included in the study. Blood samples were collected from each subject with an information sheet. The levels of alpha-fetoprotein (AFP), human chorionic gonadotropin (hCG), unconjugated estriol (uE3), and Inhibin-A were measured through standard reagents in the Access 2 Immunoassay System analyzer. All the details (personal, anthropometric, clinical history and related symptoms, and disorders) of the specific sample along with the accurate value of the four markers were filled accordingly in the Benetech® prenatal risk assessment (PRA) software with version 3.4.0.1 for the analysis of risk factors. The normal median value was recorded for further investigation to screen Down's syndrome, Edwards' syndrome and Patau's syndrome. In conclusion, in the setting of a health maintenance organization where abnormal screening tests were managed by a conventional method, marker screening will be effective. The population-specific median values for the biomarkers may be used as reference values during prenatal screening in Nepalese pregnant women. Establishment of normal medians for the prenatal serum markers will be a valuable tool in prenatal management that can be used to identify pregnancies at increased risk for certain birth defects

and chromosomal abnormalities.

Recent Publications:

1. Bhattarai, B.R.; Khadayat, K.; Aryal, N.; Aryal, B.; Lamichhane, U.; Bhattarai, K.; Rana, N.; Regmi, B.P.; Adhikari, A.; Thapa, S.; et al. Untargeted Metabolomics of Streptomyces Species Isolated from Soils of Nepal. *Processes* 2022, 10, 1173. <https://doi.org/10.3390/pr10061173>
2. Pokhrel A, Rayamajhee B, Khadka S, Thapa S, Kapali S, Pun SB, Banjara MR, Joshi P, Lekhak B, Rijal KR. Seroprevalence and Clinical Features of Scrub Typhus among Febrile Patients Attending a Referral Hospital in Kathmandu, Nepal. *Trop Med Infect Dis.* 2021 May 13;6(2):78. doi: 10.3390/tropicalmed6020078. PMID: 34068402; PMCID: PMC8163188.

Biography

Sandeep Thapa has his Master's degree in Biochemistry from Bangalore, India (2010). He is a founder and researcher at Kathmandu Center for Genomics and Research Laboratory (KCGRL) which is basically focused on several genetic, infectious diseases and neurological disorders in Nepalese population. Beside these, he is also working as a teaching fellow in several paramedical colleges. Additionally, he is a Managing Editor of Journal of microbiology Research Society, Nepal (JMRS, <http://journal.mrs.org.np/>) and Joint Secretary of Neuroscience. Being a life time and executive member of numerous associations, he is actively organizing and managing various, events, workshops, social awareness and volunteering program since few years. His objective is to gain more knowledge and understand the intricacy of the public health and its managements. He envisions himself as a researcher working further in the relevant researches in Nepal where he can execute possible ideas and vision to develop technology and opportunities to combat the tragedies of health, research and science.

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