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Role of donor derived cell free DNA in monitoring graft health and identifying rejection in kidney transplant patients

Naveen Kumar

University of Delhi, India

Donor derived cell free DNA (dd-cfDNA) is an emerging non invasive biomarker that is being used in detection of graft rejection and in monitoring the health of the graft. Organ transplant is not just a transplant of organ but a transplant of genome. Every transplant patient has to undergo regular tests and biopsies for monitoring the graft health. Currently used methods to detect health and rejection of transplanted kidney are late markers which tend to show the signs of rejection or dysfunction at the stage when almost 50% of the function has already been lost. Serum creatinine elevates when the kidney has already lost sufficient functioning. Biopsy being a gold standard for diagnosing rejection has its own set of limitations like high turnaround time, expensive in nature, inconvenient to patients and lastly not recommended for serial testing. Previous studies have reported that the biopsies performed after observing the rise in serum creatinine revealed active rejection in as low as 27% of the cases. Therefore, dd-cfDNA is emerging as a new gold standard for monitoring graft health and for diagnosing rejection in kidney transplant as well as in other solid organ transplant patients. dd-cfDNA has a high sensitivity and specificity, that leads to an effective reporting of the graft health. It does not require donor samples and is applicable to all sex, ethnicity, and organs, which makes its utility very high. Here the author will elucidate the role, utility and applicability of donor derived cell free DNA in kidney transplant patients.

Biography

Naveen Kumar is pursuing his PhD from University of Delhi. He is carrying out his fieldwork at Sir Ganga Ram Hospital, Delhi. He is working on identification of non-invasive biomarkers for graft rejection, the impact of COVID-19 vaccination on CKD and transplant patients, quality of life of transplant and CKD patients. Beside this he is involved in projects on COVID-19 prognosis and mucormycosis. He has published 5 papers in reputed journals.

naveen20kr@gmail.com