

Seroprevalence of Varicella IgG antibodies in adult CKD population and their immune response to Varicella Vaccination

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INTRODUCTION

Chronic kidney disease (CKD) is associated with altered immune system; chronic inflammatory state and immune suppression existing simultaneously. Infections are the 2nd most common cause for death among CKD.

Varicella-zoster virus (VZV), causes 2 clinical entities, varicella (Chickenpox) in children and Herpes zoster (HZ) in adults.

Incidence of HZ infection in CKD patients is 10 times higher than the general population; more severe in dialysis patients; Mortality rate is 13.6%

Hence it is worth vaccinating them; however Indian guidelines does not mandate it. Due to their altered immune system, the antibody levels can gradually reduce with time, hence need for monitoring titres.

AIMS AND OBJECTIVES

To determine the seroprevalence of varicella IgG Ab in adult CKD patients(stages 3 to 5D),
 To assess effectiveness of standard varicella vaccination, in seroconversion of CKD patients

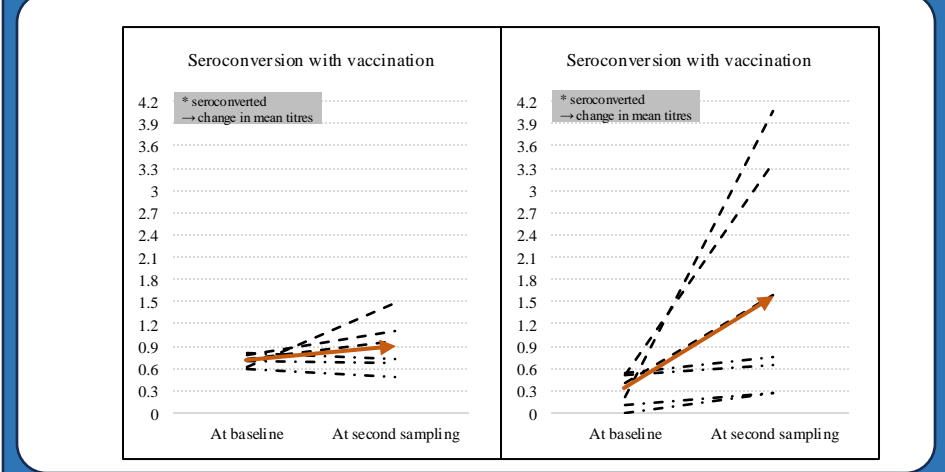
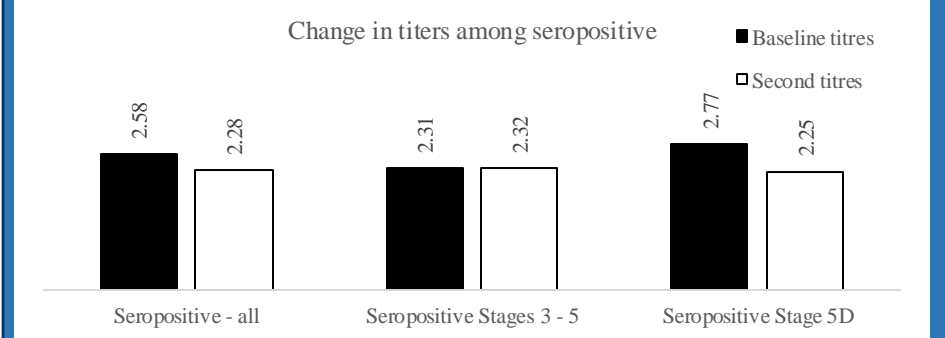
STUDY

Location – Apollo Hospital, Bangalore
 Duration - April 2020 to April 2022//////////
 Type - Prospective observational

RESULTS

Base line characteristics

N=175; average age - 64.7 ± 12 years; 60% - males; 57.14% - CKD 5D; rest were CKD stages 3 to 5; average anti-Varicella IgG levels were 2.35 ± 1.07
 None of them had received any Varicella vaccine prior to the study period. 38 (21.71%) had history of chickenpox during their childhood. 5 (2.86%) had history of HZ prior to the study period
 159 (90.86%) were seropositive (titres >0.9); 7 (%) – equivocal (0.6 – 0.9); 9 (%) seronegative (<0.6)



MATERIALS AND METHODS

Inclusion / Exclusion criteria –
 Included - All adult CKD patients (stages 3 to 5D)
 Excluded - CKD stage 1 and 2, failed renal allograft re-initiated on MHD, chronic illness, active malignancy, pregnancy

N = 175 – Adult CKD patients (stages 3 to 5D)

Anti-Varicella IgG (Anti-Var-IgG) titers (ELFA); reported as Ratio between test value and standard; (>0.9 - seropositive; 0.6 – 0.9 - equivocal; <0.6 - seronegative)

Varicella vaccine; 1350 plaque forming units (PFU); 0.5ml; subcutaneous used

Equivocal titers (n=7); 1 dose of vaccine given
 Seronegative (n=9); 3 doses 4 weeks apart

Anti-Var-IgG titers rechecked after 3 months

CONCLUSION

Seroprevalence of Anti-Var-IgG Ab was 90.86%
 Among seronegative (equivocal) Anti-Var-IgG Ab titres increased, even with single dose, however the increase was small.
 2 doses of vaccination, increased the titres significantly as compared to single dose.
 It is not advisable to use single dose of Varicella vaccine in CKD patients

LIMITATIONS

Study was done in a single centre, size of the cohort was small, Duration of follow up was short
 There was over-representation of patients on dialysis (57.14%)

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