

**A NATIONWIDE REPORT OF LONG TERM COVID-  
19 SEQUALAE IN KIDNEY TRANSPLANT  
RECIPIENTS: LARGEST REPORT FROM INDIA**

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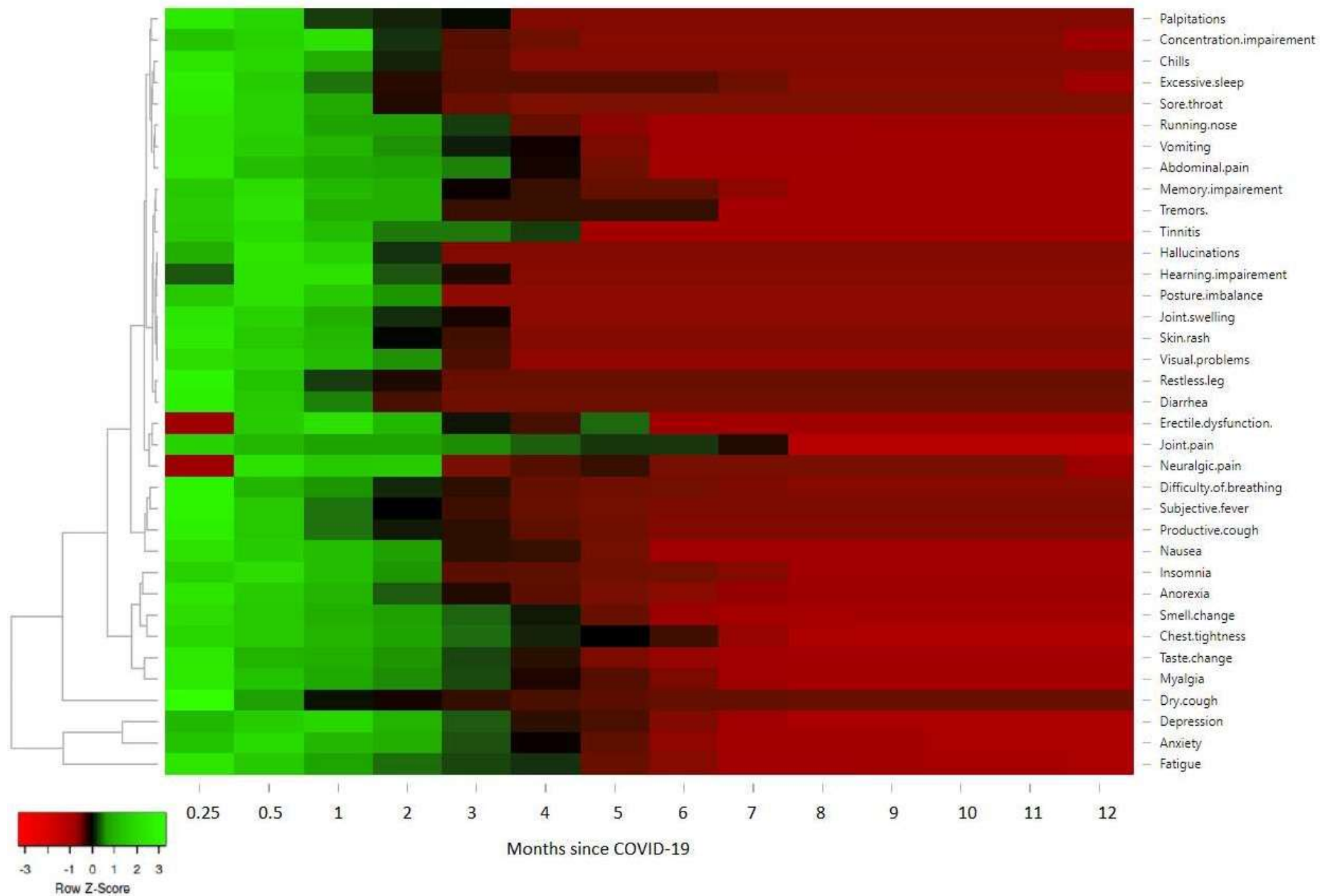
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**Conflict of Interest: Nil**

# Materials and Methods:

A multicentre (n = 15), retrospective analysis of confirmed COVID-19 (n = 2103) KTR patients during March 2020 to March 2022 who have completed at least 1-year follow-up after infection. A comprehensive list of symptoms questionnaire along with open ended questions were distributed in-person. Tools used to measure the post-COVID-19 burden were EuroQol- 5 Dimension (EQ-5D-5L), EuroQol visual analogue scale (EQVAS), The Functional Assessment of Chronic Illness Therapy (FACIT-13), Generalised Anxiety Disorder Assessment (GAD-7), Hospital Anxiety and Depression Scale (HAD-7) scores, Patient Health Questionnaire (PHQ-9), Clinical frailty score (CFS-9), and Modified Borg scale of dyspnea (MBSD). Primary outcome measured was incidence of post-COVID-19 illness. For risk factors associated with post-COVID-19, multivariable logistic regression was performed along with multiple imputation for missing data. For post-COVID-19 symptomology, clustered heat-map was generated by average linkage method, and Euclidean method of distance measurement..

Results: The mean (range) age of the KTR cohort was 44(18-78) years, with 64.7% male representation. COVID-19 severity during acute infection for the cohort included asymptomatic to mild (71%), moderate (19%) and severe (10%) COVID-19. The incidence of post-COVID-19 illness was 28.32%, with fatigue (37.9%) being highest among the symptoms. Chronic fatigue syndrome was reported in 9% cases. In multivariable logistic regression analysis, oxygen requirement during admission, and advanced age were the risk factors for post-COVID-19 illness. History of steroids, anti-rejection treatment, obesity, hospital admission, and comorbidities were not associated as risk factor for post-COVID-19. Clustered heat-map showed most symptoms resolve before 3 months, and very less symptoms were reported after six months. At one year, the most common symptoms reported are depression/anxiety (11%). EQVAS, EQ-5D-5L, FACIT-13, GAD-7, PHQ-9, HAD-7, CFS-9, MBSR scores improved statistically significantly (ANOVA test,  $p$ -value  $< 0.01$ ) with follow-up. In secondary analysis comparing study population with cohort of KTR without COVID-19 ( $n = 3783$ ), there was equal incidence of biopsy proven acute rejection after 6 months of follow-up.



# Conclusion

No significant long COVID-19 was reflected in our KT cohort.  
Hence, long term strict surveillance post-COVID-19 may not be needed.