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Impact of periodontitis on recipient outcomes after kidney transplantation

Hyeonjin Min[1], Jung Soo Park[2], Jihyung Yang[1], Se Won Oh[1], Myung-Gyu Kim[1], Sang-Kyung Jo[1], Won Yong Cho[1]
[1]Department of Internal Medicine-Nephrology, Korea University Anam Hospital, Korea, Republic of
[2]Department of Department-odontology, Korea University Anam Hospital, Korea, Republic of

Objectives: Periodontitis has a high prevalence in patients with CKD, and has been reported to increase cardiovascular complications and mortality. The purpose of this study was to examine whether periodontitis before kidney transplantation (KT) affects post-transplant outcomes.

Methods: A single center, retrospective study, included patients who performed living donor KT from April 2008 to October 2018. The panoramic radiographs at pre-KT work up were analyzed, and the severity of periodontitis was determined by a new classification system in 2017.

Results: A total of 166 recipients who received pre-KT dental examinations were included. Among them, 9.0%, 24.1%, 41.0% and 25.9% showed 1st, 2nd, 3rd and 4th-stage periodontitis, respectively. Advanced stage periodontitis patients were older, more diabetic, and associated with smoking history and higher CRP, suggesting chronic inflammatory condition. 46.4% of patients with periodontitis received treatments such as scaling or surgical extraction before KT and 53.6% did not. In patients without periodontal treatment, the advanced stage of periodontitis was associated with more CMV or BK infection after KT, but the incidence of acute T cell mediated rejection (ATMR) was lower in advanced stage, and there was no difference in eGFR levels during 36 months post-transplant between the stages of periodontitis. However, increased risk of infection in advanced stage was not observed in patients who received periodontal treatment. Interestingly, regardless of periodontal treatment, the patients with low stage periodontitis had a high prevalence of ATMR, and their eGFR was lower at 36-months post-transplant, particularly in young, male and non-diabetic patient.

Conclusions:

In conclusion, periodontitis could be a form of T-cell dysfunction in patients with CKD and may affect post-transplant outcomes. Without periodontal treatment, the risk of infection could increase and ultimately may lead to poor outcomes. Therefore, as a modifier of systemic inflammation and immune response, periodontitis needs to be actively diagnosed and treated before KT.