STUDENTS' CORNER
LETTER TO THE EDITOR

Normothermic Perfusion: A game-changer for kidney transplantation?

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Respected Madam, Organ transplantation has revolutionized the field of medicine. Kidney transplant, in particular, is of significant importance in Pakistan as there is an estimated prevalence rate of patients with end-stage renal disease (ESRD) of 100 per million population. The annual transplant rate is only about 8 to 10 cases per million.[1,2] Due to this shortage in organ transplants, over 15,0000 people lose their lives each year due to end-stage organ failure, among which 15000 are patients with end-stage kidney failure. These numbers can be reduced greatly if the number of kidneys available is increased.[3]

As the number of organs available for a kidney transplant is limited in Pakistan owing to strict regulations to end transplant tourism, it is crucial to increase the viability of the organs available to ensure the success and survival of patients suffering from ESRD.[4] An exciting finding was revealed by Kidney Research UK, where 100 kidneys could potentially be saved for transplant each year after being retrieved from donors in the UK via normothermic perfusion, This technique has shown promising results in numerous research.[5] As evident from the name, in this technique, oxygen is provided to organs during preservation to allow aerobic metabolism. In a review conducted by Franka Messner et al, it was concluded that this technology may be used as an ex-vivo organ assessment and treatment platform. During renal NMP, mesenchymal stromal/stem cells, multipotent adult progenitor cells, and microRNA have been used in studies, and preliminary data shows that these therapies do indeed reduce kidney injury and inflammatory response. Furthermore, in comparison to any cold preservation approach, normothermic ex vivo kidney perfusion (NEVKP) revealed a considerable reduction in preservation harm in a study conducted by Laura I Mazilescu et al.[6]

As the demand for kidney transplants increases in Pakistan, normothermic perfusion can be studied further to provide an efficient technique for the preservation of organs. By ensuring the better viability of the available organs, we can perhaps help to increase the chances of survival of patients suffering from ESRD since we already face a shortage in the number of organs available for transplantation.

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Disclaimer: None.

Conflict of interest: None.

Funding disclosure: None.

DOI: https://doi.org/10.47391/JPMA.8412

Submission completion date: 18-11-2022

Acceptance date: 26-04-2023

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