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LETTER TO THE EDITOR

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Stem cell therapy for renal failure: present considerations

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Dear Editor, renal failure is an important problem in clinical nephrology as it is usually difficult to manage patients with chronic renal failure. At present, effective ways to manage a patient are limited. Dialysis is widely performed, but this is a long term process. Also, it cannot return a patient to a normal physiological status. Renal transplantation might be the best way to successfully manage the patient with chronic renal failure and end stage renal disease although usually there is a lack of donated organs to allow for transplantation. There have been many attempts to develop new alternative management for the patients.

Stem cell therapy is a new approach in clinical medicine. Stem cell therapy makes use of stem cells for treatment of many diseases. As a new approach, it is still under investigation in several clinical trials in medical centers around the world. Focusing on renal failure, there are some reports on using stem cell therapy for management of the patients. Since mesenchymal stem cells possess the ability to differentiate into tissues of mesodermal lineages, it is widely mentioned for its usefulness in the management of renal ischemia.[1,2] Further applications to cases of chronic renal failure and end stage kidney disease are also proposed. Nevertheless, there is still no supportive evidence from clinical trials in human subjects regarding the usefulness and safety of stem cell therapy for management of renal failure.[3] A recent case report from India details interesting new evidence. This is a case report concerning a patient receiving stem cell therapy for neurological problems. In this case, the patient also has chronic renal failure. After treatment with stem cells, the renal function of the patient improved.[4] There is also another case report from China on using combined renal transplantation and stem cell therapy for management of the patients with chronic renal failure. An improvement could be observed in this case, however, it cannot confirm that the improvement is due to transplantation or stem cell therapy.[5] Yun and Lee noted that the actual effects of stem cell therapy on survival rate as well as recovery of destroyed renal tissues are still inconclusive.[5] However, Swaminathan et al. found that stem cell therapy could help decrease the time required to return to normal renal function in cases of post cardiac surgery acute renal injury.[6] The rat model study on this specific issue is still interesting basic research.[7] At present, there are many ongoing registered clinical trials on stem cell therapy for management of renal failure (such as those described in clincialtrial.gov). It is expected that the results from these trials, after completeness in the near future, will be useful and result in a great step forward in development of stem cell therapy for renal failure.

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While thr effectiveness of stem cell therapy is still questionable, an important consideration is raised regarding ethics in using stem cell therapy, a novel treatment without confirmation at present, for management of the patient.[3] In fact, there are some reports from around the world regarding the danger of using stem cell therapy for patients with chronic renal failure. Sometimes, adverse effect can be seen and in the worst case fatality. At present, illegal and unethical attempts to use stem cell therapy can be found in several countries around the world. The news of the death of a renal failure patient after receiving uncontrolled stem cell therapy in Thailand is the best example (https://www.bbc.co.uk/news/10339138).

Conclusively, stem cell therapy is a promising method and has potential for use in the treatment of renal failure. Nevertheless, the risk associated with applied stem cell therapy is still too high to utilize this method for clinical practice at present. It requires further accumulated evidence from ongoing studies and further medical development to establish proper standard guidelines for using stem cell therapy for renal failure.

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