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Editorial

Stem Cell Therapy: The Future of Medicine

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Stem cell research has been a beacon of hope and flashpoint of controversy since its inception. At the center point of this field the potential to revolutionize medicine and it's all branches, offering treatments and possibly cures for a host of diseases that have long eluded our best efforts. Yet, this potential is hidden because of ethical issues and concerns that continue to ignite debate among researchers, policymakers, religious groups, and the public at this point of time, it's very essential to explore both the promise and controversy surrounding stem cell research to understand its full scope and implementation.

Stem cells are unique because they have the ability to develop in too many different types of cells in the body. This characteristic holds immense promise for regenerative medicine. We can imagine a world where damaged tissues and organs could be repaired or regrown or replaced in case of neuro or spinal cord injuries, and where degenerative disease like Parkinson's and Alzheimer's could be treated effectively without any surgical interventions. A report from Mayo Clinic highlight show Induced Pluripotent Stem Cells (iPSCs) are being used to model disease, test new drug, and develop treatments that are personalized to the genetic machinery of individual patient [1].

Early clinical trial shows that stem cell derived therapies can improve motor function in patients with Parkinson's disease, illustrating the transformative potential of this research [2]. Recently, advances in this field have shown significant progress. For example, stem cell therapies are being developed to treat conditions like Leukemia and lymphoma, where stem cell can be used to regenerate healthy blood cell after chemotherapy. Moreover, stem cells are being explored for the treatment of heart disease, diabetes, and even macular degeneration. The possibility of growing organs in the lab from a patient own cells, reducing the chances of rejection and lessen the chronic shortage of donor organs is another exciting perspective. Stem cells can be used to target and destroy cancer cells, reducing the risk of occurrence.

Moreover, stem cells can help regulate immune system, potentially treating autoimmune disorders like multiple sclerosis and rheumatoid arthritis. Interestingly, several arthroplasties are useless as hardware implants can't work as our original joints. Simultaneously, there is no perfect approach or treatment available for complicated pilon fractures and also, we can't avoid complications like hardware failure, surgical wound infection, malunion, non-Union, nerve injury, etc. In this case stem cell therapy can be a better option [3-6].

Another example is of Cervical Disc Degenerative Disorders (CDDD), where surgeons choose Artificial Cervical Disc Arthroplasty (ACDA) with motion sparing benefits with potential drawbacks of implant failure, Heterotopic ossification etc., [7] In stem cell therapy, mesenchymal cells have immunomodulatory functions and ability to differentiate in your cartilage, hence are considered as potential source for intervertebral disc regeneration [8].

Contrarily, many stem cell therapies are still experimental and have not been thoroughly studied for safely and efficacy. Additionally, with many medical treatments, there is a risk of infection or rejection of stem cells .and also the stem cell therapy industry is without any regulatory body, asking it difficult to ensure the standards and quality treatment. Drastically, there is small risk of Tumor formation in stem cell treatments.

Last but not the least, the use of embryonic stem cell worth raises several ethical concerns, as they are derived from human embryos. It's quite obvious that we need more clinical trials to overcome the contradiction between success and failure of stem cell therapy in different branches of medicine [9].

In a nutshell, patients suffered from debilitating conditions can be benefitted with stem cell therapy. Stem cell therapy has got immense potential to treat several untreatable conditions. However, the ethical issues associated with the use human embryonic stem cells can't be left unnoticed. By focusing on less controversial options iPSCs and setting clear regulations, medical sciences can tackle the full potential of stem cell therapy without breaking ethical boundaries.

Stem cell therapy can be the future of medicine with responsible research strategies, ethical consideration, and sensible regulation.

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Conflict of Interest

None.

References

1. *http://www.mayoclinic.org/tests- procedures/bone- marrow-transplant / in- depth / stem-cells/art-20048117 access on 1 /9/2024*
2. Lindvall O, Kokaia Z (2006) Stem cells for the treatment of neurological disorders. Nature. 441(7097): 1094-1096.
3. Dwivedi A, Dwivedi SS, Tariq MR, Muhammad Shoaib, Dorina Lauritano (2019) Stem cell regenerative medicine -A new hope in orthopedics-Review Article. J Stem Cell Biol Transplant 3: 1-4.
4. Dwivedi A, Dwivedi SS, Su Zhenhong, Si Wenxia, Yuan Chao (2018) Open reduction and internal fixation of posterior pilon variant fractures with Butteress plate through posterolateral approach. Int J Contemporary Med Res 5: 10.
5. Dwivedi A, WX Jian, Dwivedi SS (2017) Artificial cervical disc replacement, "a double-edged sword"-A clinical review. Int J Contemporary Med Res 4: 1163-1168.
6. Atul Dwivedi, Wu Xue Jian, Shweta Shukla Dwivedi, Neelam Rekha Dwivedi, Wu Han, et al. (2017) Pilon fracture: An unsolved riddle An updated review. Int J Contemporary Med Res 4: 718-725.
7. Dwivedi A, Dwivedi S (2024) Issue of Heterotopic ossification in Artificial Cervical Disc Replacement. Int J of Emerging Technologies and Innovative Research 11(2): 476-489.
8. Sakai D, Mochida J, Toru Iwashina, Takuya Watanabe, Tomoko Nakai, et al. (2005) Differentiation of mesenchymal stem cells transplanted to a rabbit degenerative disc model; potential and limitation for stem cell therapy in disc regeneration. Spine 30(21): 2379-2387.
9. Dwivedi A, Dwivedi SS, Tariq MR, Xiaoming Qiu, Suzhen Hong, et al. (2020) General Idea About the Reach of Stem Cell Regenerative Medicine: Evidence Based Review. JRMDS 8(4): 57-64.