Professor D Balasubramanian
Distinguished Scientist

The therapeutic potential of corneal stem cells is perhaps as manifold as is the pluripotency of the stem cells themselves. Dr Basu has indeed tapped into this potential with his work with stem cells over the last decade. By adapting the principles of transplantation of laboratory cultured epithelial stem cells and applying them to an innovative procedure wherein these stem cells are cultured in vivo, he has pioneered a procedure that has slowly but surely changed the treatment protocols for stem cell deficiency across the globe. This technique known as simple limbal epithelial transplantation not only obviates the need for setting up an expensive stem cell laboratory it also eliminates the waiting period for culturing the cells. Furthermore, what was once a two staged procedure with the associated cost incurred by the patient, is now a single staged surgery with equally efficacious outcomes. The successful outcomes of this procedure have been simulated by several independent surgeons. The simplicity of the technique and the employment of routine surgical equipment ensures its effortless replication and adaptation. Dr Basu has also delved into stems cells from deeper layers of the cornea and has been vital in the development of these stromal stem cells as a viable option for the treatment of corneal scarring, which is one of the most common causes of preventable blindness across the globe. Additionally, he has developed a simple delivery system that ensures easy availability of this therapeutic modality even in remote centres with limited resources.

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