SUMMARY

- The normal ocular surface is composed of corneal and conjunctival epithelia separated by limbal epithelium and the all are covered by preocular tear film.
- The goblet cells are the chief source of tear mucin and are essential for moistening the ocular surface.
- Stem cell for corneal epithelium in the limbal basal cells, act as a barrier against conjunctivalisation of the corneal surface and are involved in the renewal and regeneration of corneal epithelium.
- Limbal stem cell deficiency is characterized by recurrent epithelial defect, ulceration corneal vascularisation, chronic inflammation scarring and conjunctivalisation. The clinical picture include decrease visual acuity, photophobia, tearing and blapharospasin.
- Diagnosis of stem cell deficiency include history of limbal tissue destruction by chemical, thermal or surgeries, clinical feature of stem cell deficiency, immunoflworescent staining, impression cytology and confocal scanning video microscope.
- Diseases characterized by total loss of stem cells include chemical, thermal injuries, Stevens-Johnson syndrome, multiple surgeries to the limbus and contact lens induced keratopathy.

- Hypofunction of stem cell present in anirida, neurotrophic keratopathy, chronic lumbitis, peripheral corneal ulceration keratitis and pterygium.
- Limbal transplantation aims at transferring limbal cells, these limbal cells will optimize the rehabilitation of the corneas suffering from total loss or permanent damage of the corneal limbal epithelium.
- When limbal stem cell deficiency involve only one eye, successful reconstruction can be achieved by limbal conjunctival autograft which involve transfer of two free grafts of limbal tissue from the uninjured or less injured eye to the injured eye.
- When limbal stem cell deficiency involve both eyes, corneal surface reconstruction relies on transplantation of an allogenic source of limbal epithelial stem cells. This can be achieved by limbal conjunctival allograft from living related donors or keratolimbal allograft from cadaveric donors. Because the source of limbal epithelial stem cells is allogenic. The survival of the graft depends on systemic immunosuppression.
- Transplantation of ex vivo expanded limbal epithelial stem cells represent a new surgical procedure with the advantage of much smaller limbal tissue will be removed from the healthy eye by biopsy. Also, only epithelial cells are transplanted thus reducing immunogenicity if an allogenic source is used.