Phototherapeutic keratectomy (PTK) may be an effective treatment option for aniridic keratopathy, according to a Greek ophthalmologist. "Aniridic keratopathy is a major cause of vision loss in patients with aniridia. Penetrating keratoplasty and/or stem cell allograft have been proven ineffective for the long-term treatment of this disorder. PTK represents a new treatment approach," Miltos Balidis MD, PhD told the 18th International Conference of the Hellenic Society of Intra-ocular Implants and Refractive Surgery.

Dr. Balidis described his approach which combined argon laser photocoagulation of superficial corneal neovascularization phototherapeutic keratectomy (PTK). He used the LADARVision 4000 excimer laser to perform an off-centred ablation assisted by a smoothing agent (hyaluronic acid 1%).

"First of all we obliterate the vessels with the argon laser to close them, so we won't have bleeding during the operation. Then we do a scraping of the epithelium, just the elevated lesion. We put on a masking agent and then we try to do surface ablation just on the elevated lesion. We put on a masking agent and then we try to do surface ablation just on the elevated lesion. If it's peripheral it can be a problem because you can induce secondary irregular astigmatism. We overcome this problem by doing a hyperopic correction. We also have laser with an excellent tracking system to overcome the problem with nystagmus."

He said that hyperopic treatment could be applied to equalise the ablation. He takes the necessary measurements before the surgery. During surgery, he can stop, apply visco-elastic, treat and repeat. So far his initial results in two patients have been good, with all treated eyes showing increased corneal clarity and visual acuity improvement after a follow-up of seven months, he reported.

"If necessary we can always do it again and again, after five years or 10 years, without the need for grafting or anything else. If they have hyperopia, it's a bonus, we correct that. If they don't have hyperopia we can apply myopic correction in a secondary operation." He said the big problem is nystagmus, which is overcome with the laser's eye tracker. The slow epithelial healing rate, associated with the insufficiency of the limbal stem cells, is another problem. The refractive outcome can also be problematic.

He said that recurrences of keratopathy after photodisruption can be expected, but this relatively safe procedure could be an alternative treatment in cases where the more complicated procedures have failed.

"Aniridic keratopathy is a disease of the limbal stem cells and their microenvironment. This of course raises concerns of damaging the transient amplifying epithelial cell population with the excimer laser when we ablate the cornea. Those concerns were appropriately addressed in Dr. Balidis work," commented Anastasios Charonis MD.

"Even though we lack longterm follow-up in the patients presented, I think it is appropriate to argue that very careful phototherapeutic keratectomy with 3rd generation excimer laser system may be at least tried in cases of aniridic keratopathy where the combination of penetrating or nonpenetrating keratoplasty in adjunct with limbal allograft transplantation is the viable, but extremely risky option. I look forward hearing longer follow up results in upcoming meetings."