A new system called LipiFlow® (TearScience), designed to remove obstructions in the meibomian gland through the application of heat and gentle pulsatile pressure, appears to increase the lipid content of the tear film and reduce ocular discomfort in patients with evaporative dry eye disease, said Matteo Piovella MD, Centro Microchirurgia Ambulatoriale, Monza, Italy.

“This new system provides an effective and efficient means of treatment for meibomian gland dysfunction and evaporative dry eye. For patients with meibomian gland dysfunction, this treatment should be considered prior to laser-assisted refractive surgery or advanced technology lens implantation in order to optimise the tear film and thus optimise surgical outcomes,” Dr Piovella told the 17th ESCRS Winter Meeting.

In a study that involved 40 eyes of 21 patients with meibomian gland dysfunction (MGD) and dry eye syndrome, treatment with the LipiFlow system brought about a reduction in symptoms and an increase in the thickness in the lipid layer of the tear film, as quantified by the LipiView® Interferometer (TearScience), in all patients by one month.

Patients reported no discomfort or pain during or after treatment. In addition, the mean pre-treatment iCU score is increased by 45.75 per cent from 46.05±13.68 to 67.12±23.65 at one month post-treatment. Furthermore, expression of the meibomian gland using a standardised technique provided further evidence of improved meibomian gland functionality.

Dr Piovella noted that studies show that MGD is present in up to 90 per cent of eyes with evaporative dry eye. MGD results in a reduced secretion of meibum which, in turn, decreases the lipid layer thickness of the tear film. That, in turn, results in an increase in evaporation, which decreases the thickness of the tear film’s aqueous layer.

The expression of obstructions to the gland can restore its function, he said.

“This treatment only takes 12 minutes and it is free of complications. It allows the patient to return to daily life on the day of the treatment and the efficacy of the treatment has been shown to last up to 18 months before needing to be repeated. The weak point is that it is very expensive which might prevent it from being widely used,” Dr Piovella concluded.