
WHITE PAPER

First clinical experience with the SENSIMED Triggerfish® during 24-hour continuous IOP monitoring

Background

Intraocular pressure (IOP) and fluctuations of IOP have been recognised as a significant risk factor for the development and progression of glaucoma. However, almost 50% of IOP peaks happen outside office hours and remain undetected using current methods. Continuous IOP monitoring is an unmet medical need in the field of glaucoma. Leonardi et al. have developed a contact lens-based sensor enabling continuous IOP monitoring (SENSIMED Triggerfish®). The safety of the device has previously been shown in controlled studies.

Our experience

We have used the SENSIMED Triggerfish® in an initial cohort of glaucoma patients who were scheduled for diurnal tension curve (DTC) Presence of fluctuations and IOP peaks during sleep was observed on the sensor recordings. In most cases, IOP peaks higher than normal clinical measurements were seen on the diurnal IOP curve. The sensor was well tolerated during 24-hour continuous IOP monitoring in ambulatory mode. The obtained IOP curves were clinically relevant and resulted in subsequent treatment modification in a significant number of our patients. This outcome is significant, since the use of the device allowed for an accelerated treatment adjustment. This device, therefore, allows to optimise patient care, reduce health-care costs related to repeated treatment change and patient hospitalisation for 24h monitoring, and individualize patient management.

Prepared by

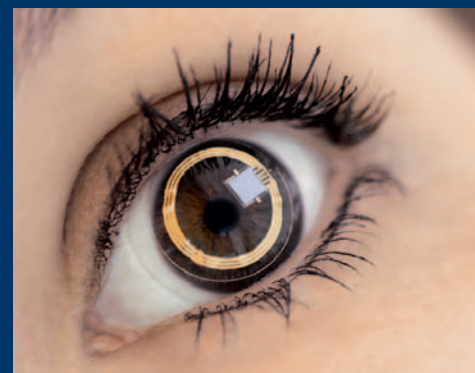
Mansouri K., MD, MPH, Shaarawy T., MD, MSc
University of Geneva, Division on Ophthalmology, Glaucoma sector
March 2010

References

Matteo Leonardi, Elic M. Pitchon, Arnaud Bertsch, Philippe Renaud and Andre Mermoud: "Wireless contact lens sensor for intraocular pressure monitoring: assessment on enucleated pig eyes". *Acta Ophthalmol.* 2009; 87: 433–437.

E.M. Pitchon et al. "First In-Vivo Human Monitoring of Intraocular Pressure Fluctuation and Ocular Pulsation by a Wireless Soft Contact Lens Sensor", Poster presentation at 2008 EGS Congress in Berlin.

Leonardi M, Leunberger P, Bertrand D, Bertsch A & Renaud P (2004): "First steps towards noninvasive intraocular pressure monitoring with a sensing contact lens". *Invest Ophthalmol Vis Sci* 45: 3113–3117.



The SENSIMED Triggerfish® Sensor is a soft, hydrophilic silicone disposable contact lens embedding a MEMS sensor and a telemetry microprocessor.

SENSIMED AG
Route de Chavannes 37
1007 Lausanne
Switzerland

Tel. +41 21 621 9191
info@sensimed.ch
www.sensimed.ch

© 2010 SENSIMED AG. All rights reserved.