

Continuous intraocular pressure monitoring with a wireless ocular telemetry sensor: initial clinical experience in patients with open angle glaucoma

**Kaweh Mansouri
Tarek Shaarawy**

Accepted: 20 November 2010

Published Online First: 7 January 2011

Abstract

The authors report their initial clinical results with a novel wireless ocular telemetry sensor (OTS) (Sensimed AG, Switzerland) for continuous intraocular pressure (IOP) monitoring in patients with open angle glaucoma. This was a prospective, observational cohort of 15 patients. The OTS is a disposable silicone contact lens with an embedded micro-electromechanical system, which measures changes in corneal curvature induced by variations in IOP. An antenna, mounted around the eye, receives the data, which are then transmitted to a recorder. A signal was recorded in all patients. Thirteen (87%) patients completed 24-h IOP monitoring: one patient discontinued IOP monitoring due to device intolerance, and incomplete recordings were obtained in a second patient due to technical device malfunction. In 9/13 (69%) patients, the highest signals were recorded during the nocturnal period. No serious adverse events were recorded. The OTS shows good safety and functionality to monitor IOP fluctuations in patients over 24 h. This technology has the potential to provide hitherto unobtainable data on the chronobiology of IOP, possibly leading to improved care of glaucoma patients.

Author Affiliations: Glaucoma Sector, Department of Ophthalmology, University of Geneva, Switzerland

Correspondence to: Dr Kaweh Mansouri, Glaucoma Sector, Department of Ophthalmology, University of Geneva, 22, rue Alcide Jentzer, 1211 Genève, Switzerland; kawehm@yahoo.com