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Wetability and deposits accumulation on anterior surface of blue light-filtering contact lens

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Abstract

Purpose To evaluate wetability and deposits accumulation on anterior surface of blue light-filtering contact lens after a cleaning process with Multi-purpose Solution Cleaning, Hydrogen Peroxide solution and Lubricant Drops.

Methods A self-controlled trial was carried out in 41 contact lens users who were wearing blue light-filtering contact lens (Profilcon A 52%WC) for 30 minutes per test. Wetability and deposits accumulation on anterior surface were evaluated according to the International Organization for Standardization ISO11980 guidelines. Four conditions were set: a)usual contact lens, b)blue light-filtering contact lens after cleaning process with Multi-purpose Solution Cleaning, c)after Hydrogen Peroxide solution disinfection and d) after Lubricant Drops instillation.

Results Statistically significant differences were not observed within the parameters evaluated among the different cleaning solutions proposed. For a,b,c and d conditions, the percentage of lens that showed very insignificant deposits accumulation(visible after drying tear film) were 25%,34%,20% and 27%, respectively and the percentage of lens that showed not significant deposits (deposits easily eliminated) were 3%,2%,7% and 8%, respectively. Regarding wetability, minor wetability problems were showed and these ones were solved by the blinking in 18%, 29%, 18% and 18% of the cases, respectively, whereas the areas that remained dry on the contact lenses were 4%,0%,5% and 2% of the cases.

Conclusion The wetability and deposits accumulation on anterior surface of blue light-filtering contact lenses is similar for the different cleaning treatment and equivalent to the non blue light-filtering contact lens.

ABSTRACT BOOK

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• T049

Lacrymal secretion in the non-affected fellow eye of patients with recurrent unilateral herpetic keratitis

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Purpose To assess the potential impact of unilateral recurrent herpetic keratitis on the tear secretion of the fellow eye.

Methods Patients referred for a recurrent herpetic unilateral stromal keratitis and control patients, age- and sex-matched, with no history of corneal disease. .Dry eye conditions where tested in keratitis patients after a minimum quiescent period of three months. Osmolarity (using the TearLab®), tear break-up-time (TBUT), tear reflex (Schirmer I test), and central corneal sensitivity (using the Cochet-Bonnet aesthesiometer) were assessed in the two eyes of patients and controls. Values were compared using non-parametric tests, and statistical significance was defined as p<0.05 (2-tailed).

Results Thirty-five patients (mean age: 52.3 ± 7.3 years) and 35 control subjects (mean age: 52.8 ± 8.5 years) were consecutively included in the study. We found no difference between right and left eyes of control patients. The corneal sensitivity and TBUT was strongly reduced in the affected side (4,85g/mm2 ± 2.0; 4.6sec ± 1.1 respectively) compared to the non-affected side (0.57 g/mm2 ± 0.13 p=0.001; 7.7sec ± 1.4 p<0,001 respectively). The average tear osmolarity in non-affected eyes was higher than the average of the highest values observed in control subjects (316.3 versus 303.8 mmol/L, p=0.0001). Similarly, the average BUT in non-affected eyes of herpetic patients was lower than the average of the lowest values observed in control subjects (7.7 versus 12.2 sec, p=0.0001).

Conclusion This study suggests that unilateral recurrent stromal herpetic keratitis induces dry eye condition in the non-affected eye.

• T050

Wetability and deposits accumulation on anterior surface of blue light-filtering contact lens

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Purpose To evaluate wetability and deposits accumulation on anterior surface of blue light-filtering contact lens after a cleaning process with Multi-purpose Solution Cleaning, Hydrogen Peroxide solution and Lubricant Drops.

Methods A self-controlled trial was carried out in 41 contact lens users who were wearing blue light-filtering contact lens (Profilcon A 52%WC) for 30 minutes per test. Wetability and deposits accumulation on anterior surface were evaluated according to the International Organization for Standardization ISO11980 guidelines. Four conditions were set: a)usual contact lens, b)blue light-filtering contact lens after cleaning process with Multi-purpose Solution Cleaning, c)after Hydrogen Peroxide solution disinfection and d) after Lubricant Drops instillation.

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Conclusion The wetability and deposits accumulation on anterior surface of blue light-filtering contact lenses is similar for the different cleaning treatment and equivalent to the non blue light-filtering contact lens.

• T051

Observation of dendritic cells in subclinical corneal graft disease using confocal microscopy imaging

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Purpose The aim of this study was to show the applicability of confocal microscopy for the diagnosis of corneal graft disease in presence of masking corneal changes.

Methods The examined group consisted of 12 patients with suspected corneal graft rejection, in which the local state of the cornea caused difficulties in diagnosis. 7 patients was after DALK procedure, 4 after PK, 1 after DSAEK. Local state of corneal transplant included: edema in secondary glaucoma (3 patients), inflammation with ulceration (3 patients), edema in bullous keratopathy (1 patient), edema in keratouveitis (4 patients), haze after inflammation (1 patient). We performed following procedures: slit lamp examination, scans using a Scheimpflug camera (Pentacam, OCULUS), confocal microscopy in vivo (Rostock Cornea Module, Heidelberg Engineering Retina Tomograph III).

Results In a slit lamp examination, uncharacteristic macroscopic changes were described - focal turbidity, endothelial deposits and edema. In an examination with the Scheimpflug camera an increased thickness and haze in the posterior stroma was reported. In order to search for microstructural evidence of rejection underwent corneal confocal microscopy which in 11/12 cases showed infiltration of dendritic cells. These cells were located at well-defined depth (where the adhesion of the corneal transplant) and was not appearing in other parts of the cornea.

Conclusion In vivo confocal microscopy is a useful method for the detection of corneal transplant disease also in presence of local changes masking rejection symptoms. This examination is characterized by high sensitivity and ranges in this study of about 92%.

• T052

Risk factors for contact lenses related microbial keratitis: a prospective multicenter case control study

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Purpose MMK remains a rare complication of CL wear, but is of interest because it is both a major cause of new cases of MK in the population, and the only sight-threatening complication of an otherwise safe method of vision correction. The aim of the study is to identify risk factors and to put into perspective the individual risk and the societal burden of CL-related MK patients.

Methods A prospective multicenter case-control study was conducted in 16 French University Hospitals on all lenses wearers presenting with MK between July 2007 and December 2011. Patients had a complete ophthalmological examination and were interviewed by a 50 items anonymous "questionnaire" to determine subject demographics and lenses wear history. The CL related MK subpopulation (Case) was compared to healthy CL wearers (Control).

Results 684 CL related MK and 599 healthy CL wearers were included. Patients wearing soft contact lenses had a higher risk for MK, as compared as rigid lenses wearers (Relative risk, 4.1 ; p < 0.001). Among soft lenses, daily disposable CL (RR, 1.8 ; p = 0.01) and 2 weekly replacement CL (RR, 2.1 ; p < 0.001) had an increased risk of MK than monthly replacement CL, respectively because of some lacks in basic rules of hygiene (absence of hand washing) and the absence of a professional supervision for daily disposable CL and the overtaking of the deadline of renewal for 2 weekly replacement CL.

Conclusion With the increasing avaibility of CL, notably through internet or local market, this study serves to highlight the increasingly documented dangers of freely available CL without professional supervision and of the lack of information about the basic rules of hygiene and the basis of CL care and handling.