CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.2546458

Available online at: http://www.iajps.com ***Review Article***

COMPLICATIONS ASSOCIATED WITH CONTACT LENSES

Hassan Essa AlFarhan[1], Nadeen Omar Helmi[2], Abdulhady ali Bindajam[2], Emad abdullah alseeni[2], Abdulhakam abadi falemban[3], Mohammed Mousa Alghamdi[4], Duoaa Mohammad Sakabomi[5], Mustafa Ahmed aljawhari[2], Turki Mohammed Alqarni[6]

[1]Aljaber Eye and ENT Hospital, [2]Jeddah eye hospital, [3]Al diyafa primary health care, [4]Almaarefa University, [5]Alnoor Specialist Hospital ,[6]King Fahad Armed Forces Hospital

Corresponding Author:

Abstract:

Introduction: *The use of contact lenses nowadays is extremely common and compose a very beneficial industry. The size of the global market of contact lenses is expected to reach more than twelve million US dollars by 2020, at a growth rate of seven percent. Contact lenses are usually ordered for the treatment of refractive errors that cannot be managed by spectacles like aphakia, keratoconus, irregular cornea, and high anisometropia. Additionally, they could be utilized for the treatment of simple refractive errors as another option to spectacles. Furthermore, contact lenses can be given for the treatment of dry eye in Stevens-Johnson syndrome or Sjogren syndrome, post refractive surgery rehabilitation, and persistent epithelial defect. Moreover, the cosmetic usage of contact lenses is extremely trending nowadays. Contact lenses have improved the quality of life not only by correcting refractive errors but also by providing better appearance and less restriction in activities. Regrettably, contact lenses could be responsible for many complications that are disappointing for the patients, forcing them to switch from habitual mode of vision correction to other modalities if possible. In this review, we will discuss the most recent evidence regarding Complications associated with contact lenses*

Aim of work: *In this review, we will discuss Complications associated with contact lenses*

Methodology: *We conducted this review using a comprehensive search of MEDLINE, PubMed, and EMBASE, January 1985, through February 2017. The following search terms were used: Complications, contact lenses, presentations, management*

Conclusions: *Contact lens problems are vast and can lead to severe sight-threatening complications or contact lens drop out if not addressed appropriately. We reviewed some of the most important contact lens-related complications and their diagnosis, epidemiology, and management.*

Key words: *Complications, contact lenses, presentations, management.*

Corresponding author:

Duoaa Mohammad Sakabomi,

Sakabomi.duo@gmail.com - 0509017101

QR code

Please cite this article in press Hassan Essa AlFarhan et al., ***Complications Associated with Contact Lenses.,*** *Indo Am. J. P. Sci, 2019; 06(01).*

INTRODUCTION:

The use of contact lenses nowadays is extremely common, [1] and compose a very beneficial industry. [2] The size of the global market of contact lenses is expected to reach more than twelve million US dollars by 2020, at a growth rate of seven percent. [4] Contact lenses are usually ordered for the treatment of refractive errors that cannot be managed by spectacles like aphakia, [3] keratoconus, [4] irregular cornea,[19-22] and high anisometropia. Additionally, they could be utilized for the treatment of simple refractive errors as another option to spectacles. Furthermore, contact lenses can be given for the treatment of dry eye in Stevens-Johnson syndrome or Sjogren syndrome post refractive surgery rehabilitation, and persistent epithelial defect. [5] Moreover, the cosmetic usage of contact lenses is extremely trending nowadays.

Contact lenses have improved the quality of life not only by correcting refractive errors but also by providing better appearance and less restriction in activities. [6] Regrettably, contact lenses could be responsible for many complications that are disappointing for the patients, forcing them to switch from habitual mode of vision correction to other modalities if possible. In this review, we will discuss the most recent evidence regarding Complications associated with contact lenses

METHODOLOGY:

• Data Sources and Search terms

We conducted this review using a comprehensive search of MEDLINE, PubMed, and EMBASE, January 1985, through February 2017. The following search terms were used: Complications, contact lenses, presentations, management

• Data Extraction

Two reviewers have independently reviewed the studies, abstracted data, and disagreements were resolved by consensus. Studies were evaluated for quality and a review protocol was followed throughout.

The study was approved by the ethical board of King Abdulaziz University Hospital

CONTACT LENS DISCOMFORT:

Definitions

According to the Tear Film & Ocular Surface Society (TFOS), contact lens discomfort is a clinical symptom that is known by episodic or persistent adverse ocular sensations related to lens wear, with or without visual problems, due to decreased compatibility between the contact lens and the ocular environment.

This complication can lead to reduced wearing time or even discontinuation of contact lens wear. These symptoms should occur after the starting period of adaptation and resolve or diminish with contact lens removal. Furthermore, CLD may accompany physical signs such as conjunctival hyperemia or ocular surface staining or could be diagnosed based only on the patient's subjective report of the discomfort. [7]

Epidemiology

The CLD prevalence is believed to range between twenty to ninety percent among patients who have symptoms due to contact lenses. The consequences of the problem seem to be impactful. This broad range can be due to differences in the evaluation, severity of the stages assessed, sampling methods, inherent factors of the studied population, and time frame between studies. [8]

Management

The aim of management is to deliver relaxed daily wearing time that suffices for the patients' desired activities; this could vary from patient to patient and should be personalized. The assessment of predisposing factors for CLD should begin at the first visit and fit. So, meticulous history taking, slit lamp examination, and tear assessment tests for estimating the risk of CLD are needed. Conditions that can lead to CLD, such as blepharitis, meibomian gland dysfunction, and dry eye, should be well addressed before beginning contact lens use.

CORNEAL NEOVASCULARIZATION:

Definition

It is the establishment of new vessels basically found in capillaries and venules of the pericorneal plexus, which progress to the corneal stroma.

Risk factors

Intrinsic lens parameters including material properties (oxygen transmissibility) have an influence on the progression of corneal neovascularization. High myopia and astigmatism can probably impact the peripheral thickness of hydrogel SCL, which reduces peripheral oxygen transmissibility and improves peripheral mechanical friction. Improper lens-corneal alignment, because of high flat or steep cornea, can lead to peripheral hypoxic or mechanical trauma in SCL users. [9]

Management
Exchanging the lens with a more oxygen-permeable contact lens, changing wearing schedule from extended wear to daily wear, switching to RGP lenses instead of soft lenses, and discontinuing contact lenses in cases of active progressive corneal new vessels are advised. Anti-angiogenic treatment of the cornea (subconjunctival or intrastromal), as well as corticosteroids and non-steroidal anti-inflammatory agents, can assist in cases with active neovascularizations that may jeopardize the survival of corneal graft or ocular surface health.

CONTACT LENS-RELATED KERATITIS:

Contact lens-related peripheral ulcer
Definition
CLPU is described by epithelium excavation and infiltration and an intact bowman layer, in contrast to corneal ulcers. Classically, CLPU and corneal ulcers are distinguished by clinical characteristics instead of histological examination. Microbial keratitis is more acute and severe, though overlapped characteristics may cause misdiagnosis.

Management
Characteristically, CLPUs degenerates naturally after interruption of the contact lens use. Steroid or non-steroidal anti-inflammatory drops are infrequently prescribed, in case microbial keratitis is not suspected. [10]

MICROBIAL KERATITIS:

Definition
Active inflammation of the cornea result from microorganisms like bacteria, viruses, or parasites linked to contact lens wear, which is its one of the most important risk factor.

Management
Infectious keratitis could be successfully avoided by appropriate care. It is the obligation of contact lens practitioners to educate patients, confirm their compliance, and provide them with educational materials. Consuming opportunities such as weblogs, emails, social networks, and mobile applications for this purpose should be encouraged.

Acanthamoeba Keratitis
Definition
Protozoal infection of the eye primarily caused by using infected contact lenses or lens solutions. Free-living amoebae of the genus Acanthamoeba are the underlying causes of this severe sight-threatening infection of the cornea.

Management
In the case of suspect AK based on the clinical setting, confocal corneal scan and proper culture media and staining methodsare recommended.

CONCLUSIONS:

Contact lens problems are vast and can lead to severe sight-threatening complications or contact lens drop out if not addressed appropriately. We reviewed some of the most important contact lens-related complications and their diagnosis, epidemiology, and management.

REFERENCES:

1. **Fonn D (2007):** Targeting contact lens induced dryness and discomfort: What properties will make lenses more comfortable. Optom Vis Sci., 84:279-285.
2. **Nichols JJ (2008**): Contact Lens Spectrum, 24:24-32. Available at: www.clspectrum.com/articleViewer. aspx?articleID=102473. [Last accessed on 2017 Jan 27].
3. **Berkowitsch A (1984):** Cosmetic haptic contact lens. J Am Optom Assoc., 55:277-279.
4. **Tan DTH, Pullum KW, Buckley RJ (1995):** Medical applications of scleral contact lenses: 2. Gas-permeable scleral contact lenses. Cornea, 14:130-137.
5. **Pecego M, Barnett M, Mannis MJ, Durbin-Johnson B (2012):** Jupiter scleral lenses: The UC Davis Eye Center experience. Eye Contact Lens, 38:179-182.
6. **Porisch E (2007):** contrast sensitivity comparison when wearing amber sport-tinted or clear contact lenses. Optometry, 78:232-235.
7. **Nichols KK, Redfern RL, Jacob JT, Nelson JD, Fonn D, Forstot SL, et al. (2013):** The TFOS International Workshop on Contact Lens Discomfort: Report of the definition and classification subcommittee. Invest Ophthalmol Vis Sci., 54: 14-9.
8. **Dumbleton K, Caffery B, Dogru M, Hickson-Curran S, Kern J, Kojima T, et al. (2013):** The TFOS International Workshop on Contact Lens Discomfort: Report of the subcommittee on epidemiology. Invest Ophthalmol Vis Sci., 54: 20-36.
9. **Lee DS, Kim MK, Wee WR (2014):** Biometric

risk factors for corneal neovascularization associated with hydrogel soft contact lens wear in Korean myopic patients. Korean J Ophthalmol., 28:292-297.

10. **Aasuri MK, Venkata N, Kumar VM (2003):** Differential diagnosis of microbial keratitis and contact lens-induced peripheral ulcer. Eye Contact Lens, 29:S60-S62.