



CODEN [USA]: IAJ PBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.845711>Available online at: <http://www.iajps.com>**Review Article****CATARACTS AND DIABETES MELLITUS - A REVIEW ARTICLE****Fateme parooei ¹, Zohreh Mahmoodi ², Morteza Salarzai ¹, Mahmood Anbari *³,
Alireza Abrishami ⁴, Ali Alidadi ⁵, Dadkhoda soofi ⁶**¹ Medical student, Student Research Committee, zabol University of Medical Sciences, zabol, Iran² Department of Cardiology, Faculty of Medicine, Zabol University of Medical Sciences, Zabol, Iran.³ zabol University of Medical Sciences, zabol, Iran⁴ Department of orthopedics Faculty of Medicine, Zabol University of Medical Sciences, Zabol, Iran.⁵ Faculty of Medicine, Zahedan University of Medical Sciences, Zahedan, Iran.⁶ Department of Internal Medicine, Amir al-Momenin Hospital, Zabol University of Medical Sciences, Zabol, Iran.**Abstract:**

Introduction: Diabetes mellitus is one of the most prevalent and most important diseases. The incidence of cataracts in diabetic patients is 2-5 times more likely than non-diabetics; it, also, occur in much a lower age. Epidemiologic studies show that cataract is the most common cause of visual impairment in adults suffering from diabetes.

Methodology: In this review article, the databases Medline, Cochrane, Science Direct, and Google Scholar were thoroughly searched to identify the studies investigating Cataracts and diabetes mellitus. In this review, the papers published until early January 2017 that were conducted to study the Cataracts and diabetes mellitus were selected. In searching for the articles, those English papers were selected that had investigated Cataracts and diabetes mellitus and its complications.

Findings: Diabetes mellitus is a systemic disorder that has, also, multiple non-ocular symptoms. Diabetes affects morphological, metabolic, physiological, and clinical aspects of the eye. Changes in the cornea associated with diabetes, called "diabetic keratopathy", is present in over 70% of patients.

Conclusion: Taking appropriate measurements against cataracts in diabetic patients requires special attention to the systematic condition of other parts of the eye. For now, many previously untreated patients would benefit from acceptable results. It is, unlike the past, recommended to perform surgery earlier than usual to provide proper treatment of retina complications.

Key words: Cataracts, diabetes mellitus, review article

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Please cite this article in press as Mahmood Anbari *et al*. Cataracts and Diabetes Mellitus-Review Article, *Indo Am. J. P. Sci*, 2017; 4(08).

INTRODUCTION:

Diabetes mellitus is one of the most prevalent and most important diseases[1]. The incidence of cataracts in diabetic patients is 2-5 times more likely than non-diabetics; it, also, occur in much a lower age. Epidemiologic studies show that cataract is the most common cause of visual impairment in adults suffering from diabetes[2]. The need for surgery is also much higher in diabetic patients[3]. Cataracts signifies any sort of luminosity in the lens and it is the most common cause of blindness in the world[4]. The World Health Organization believes that the number of blind individuals aged 60 or higher will increase up to 54 million in 2020, 45% of which will incur due to cataracts in the US[5]. The cost of cataract treatment is estimated to be over \$ 3.4 billion a year[6]. A common point that has been seen in all studies in developing countries is the high cost of surgery that has removed surgery, as an option, off the table in these areas with low income and the related officials have tried to find ways to reduce required costs as much as possible[7]. It is also anticipated that if cataract starts 10 years later, the number of cataract surgery will be reduced by about 45% annually, which requires an understanding of the risk factors for cataracts[8]. The issue of age is one of the most commonly and extensively analyzed topics in discussing cataracts[9]. Although the degeneration of lens proteins is a physiological phenomenon, other external factors, such as geographical location, nutrition, systemic diseases, and medications, can also accelerate the process[10].

METHODOLOGY:

In this review article, the databases Medline, Cochrane, Science Direct, and Google Scholar were thoroughly searched to identify the studies investigating Cataracts and diabetes mellitus. In this review, the papers published until early January 2017 that were conducted to study the Cataracts and diabetes mellitus were selected. In searching for the articles, those English papers were selected that had investigated Cataracts and diabetes mellitus and its complications.

FINDINGS:

Diabetes mellitus is a systemic disorder that has, also, multiple non-ocular symptoms[11]. These complications play an important role in the incidence and development of ocular manifestations in diabetic patients[12]. In order to control and correct the complications of the eye, attention is required on the patient's systemic condition[13]. Studies have shown that precise control of blood glucose and blood pressure reduces the incidence or progression of diabetic retinopathy[14]. Diabetes mellitus complications are, also, affecting retinopathy, and their treatment tends to slow down retinopathy[15]. An increase in

the level of fat serum is associated with macular exudation and visual impairment. Some severe exercises increase the risk of vitreous body hemorrhage in advanced stages[16]. Pregnancy leads to progression of ocular complications of diabetes, although some of these complications go away after delivery[17]. Studies have examined the effect of hyperglycemia on luminal opacity. Kato et al study showed that prolonged hyperglycemia causes luminal opacity. Also, a rapid decrease in blood glucose levels in patients with hyperglycemia can cause luminal opacity and temporary edema; additionally, the possibility of permanent luminal opacity has been discussed. Diabetes affects morphological, metabolic, physiological, and clinical aspects of the eye. Changes in the cornea associated with diabetes, called "diabetic keratopathy", are present in over 70% of patients.

CONCLUSION:

Recent research conducted on the causes and consequences of cataracts surgery in diabetic patients have reported better visual effects and fewer side effects in comparison to the past and the reason might be better diagnosis and treatment of retinopathy, implementing Early Diabetic Retinopathy Treatment [ETDRS] recommendations, improving surgical equipment, and paying attention to the systemic condition of the patient, such as blood glucose and blood pressure[18]. Although the result of cataracts surgery in diabetic patients with no or mild retinopathy is desirable, these results are visibly weaker, even disappointing, in patients with advanced retinopathy[19]. The presence of clinically significant macular edema and poor vision before surgery are risk factors for reducing postoperative visual acuity[20]. Studies in relation to the results of cataracts surgery have been more focused on visual acuity and the effect of surgery on one's vision in diabetic patients, and the quality of life and individual satisfaction have been often marginalized or skipped over[21]. Dr. Mozaffariy et al futuristic study, which examined PE and IOL surgery results in diabetic retinopathy patients through VF-14 questionnaire, showed that despite increased visual acuity after surgery, the performance and quality of vision will not change in some cases[22]. This study shows the need to understand the condition before the surgery. Cataracts is one of the most important causes of reduced sight in diabetic people. Taking appropriate measurements against cataracts in diabetic patients requires special attention to the systematic condition of other parts of the eye. For now, many previously untreated patients would benefit from acceptable results. It is, unlike the past, recommended to perform surgery earlier than

usual to provide proper treatment of retina complications.

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