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Research Article

A STUDY ON THE DISEASE OF DRY EYE AND ITS ASSOCIATION WITH DEPRESSION

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Abstract:

Objective: The disease of Dry Eye is very common problem of health. Most of the painful symptoms of this disease leads to depression and medication against the depression is also the cause of the disease of dry eye. The aim of this research work is to determine the association between the disease of dry eye and symptoms of depression among the aged population.

Methodology: This study was a transverse research work was conducted in eighteen months in Ameer Abdul Aziz Bin Mosaed Hospital Arar Northern Border Zone KSA. Ethical committee of the hospital gave the permission to conduct this research work. We took the consent of 1400 willing patients having 36 to 76 years of age from both genders who were undergoing study for dry eye. We evaluated all the patients into 2 steps. In the initial, we managed a questionnaire (DEQ-6) and then we performed tests for dry eyes. We carried out the diagnosis of the dry eye in accordance with the diagnosis standard for dry eye of Japan. In the next step, we used SGDS-K (Korean Short Geriatric Depression Scale) for all the patients, scoring one single point for every answer designated. SPSS V.17 was in use for the analysis of the collected information.

Results: Out of total 1400 patients, 28.28% patients were present with disease of dry eye. Total 24.68% patients were present with depression in accordance with SGDS-K among the patients of dry eye disease. The most frequent symptoms in this research work are watering in 32.58% and 58.0% females were present as post-menopausal. Majority of the patients of dry eye were present with old age from more than 48 year of age, more were living in the city areas, disease was dominant in men and these patients had high income and very low visual acuity in comparison with the patients with no disease of dry eye.

Conclusion: The occurrence of the depression was high in the patients suffering from disease of dry eye as compared to the patients with no dry eye disease.

Key Words: Dry Eye, Depression, Occurrence, Menopausal, Comparison, SGDS-K, Symptoms.

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INTRODUCTION:

Dry eye is the complication of the tear film. DTS (Dysfunction Tear Syndrome), OSD (Ocular Surface Disease) and KCS (Keratoconjunctivitis Sicca [1] which means dryness of conjunctiva & cornea and the meaning of the word Sicca is desiccate. When there is deficiency of the tears, it is known as Sjogren's syndrome [2]. There is variation of the incidence of dry eye from 3.0% to 28.0% in various groups of age [3]. This is very common health issue among population having more than 48 year of age [4]. The burden of the dry eyes increases with the increase of age [5]. The disease of dry eyes impacts the QoL (Quality of Life) which leads to the reduced routine activities [6]. The depression in the elder age is a frequent mental issue. Depression is the condition of the serious state hopefulness & sadness lasting for a long duration. Two research works stated that 15.0% patient's depression were present with dry eye disease in opposition to 8.0% without this identification [7]. Other research work discovers 22.0% patients suffering from depression were present with dry eye disease in comparison to 16.0% without this detection [8].

The research has displayed that depression for long duration enhances the levels of chronic pro-inflammatory cytokine which increases the worse condition of dry eye disease [6]. Kiecolt-Glaser stated that greater symptoms of depression and ratio of omega 4 to 3 has the ability to increase the formation of the pro-inflammatory cytokines. There is use of GDS in seventeen countries after translation in their languages [10].

METHODOLOGY:

The participants of this study were 1400 patients, who were getting treatment in Ameer Abdul Aziz Bin

Mosaed Hospital Arar Northern Border Zone KSA. All the patients who underwent surgery in past, utilizing contact lenses or under medication were not the part of this research work. There were 50.0% male & 46.0% were female patients with a range of age from 36 to 76 years. We assessed the patients of dry eye diseases in 2 steps. In the first step, we recorded the data about demography and manage a questionnaire for dry eye. We interrogated the frequency of the symptoms from patients. A surgeon performed slit-lamp examination, TBUT (Tear Film Break-Up Time), ST (Schirmer's Test), CFS (Corneal Fluorescein Staining) for any pathology of lid.

SGDS-K was in use in the next step on all the patients. The answers showing the incidence of depression are in italic & bold. The scores from zero to five are normal. A score more than five describes the depression. Definite depression was the presence of the SGDS-K scores at least 8 or high. Then we evaluated the association between dry eye disease & depression. SPSS V.17 was in use for the statistical analysis of the collected information.

RESULTS:

Out of 1400 patients, 50.0% were male and 46.0% were female participants. 60% were from non-urban areas. 71% patients were educated and 26% patients were laborers. All 1400 patients finished questionnaires for dry eye disease & depression (Table-1).

Characteristics		Total	Male		Female	
			831	50.00%	238	45.90%
Age	36 -48	480	269	51.00%	238	45.00%
	49 -63	560	328	49.20%	312	46.80%
	64 -76	360	230	50.98%	211	45.90%
Urban		900	520	50.60%	468	45.40%
Rural		500	312	49.60%	292	46.40%
Educated		1000	671	57.20%	461	38.70%
Laborers		400	196	42.00%	248	54.00%
Smokers		200	272	98.00%	0	0.00%
Glasses		320	145	41.80%	187	54.20%
Computer Use		285	165	53.50%	132	43.50%
Family History		230	129	46.80%	135	49.20%

Among total, 28.28% patients diagnosed with dry eye disease in accordance with the criteria of dry eye from Japan in which 51.68% were male patients and 44.18% were female patients (Table-2). Among the patients with symptoms, 55.58% had visited clinic of eye,

31.0% male patients among them were addict of cigarette smoking. We detected the blepharitis 29.0% patients of dry eye. In this current research work, 25.0% patients were present with refractive errors & 39 patients were the users of computer.

Gender	Total participants		Dry Eye Diseases		Depression	
	No	Percent	No	Percent	No	Percent
Male	760	50.60%	261	51.70%	41	29.30%
Female	640	46.00%	225	44.20%	89	66.70%
Total	1400		486		130	

Most of the patients suffering from dry eye in this research work were present with more than 48 year of age. Total 56.78% females were present as post-menopausal. The most frequent symptom in the patients on this recent research was watering as 29.58%, irritation as 20.78% & redness 17.89% (Table-3).

Age (yrs.)	Total	Male		Female	
		No	Percent	No	Percent
36-45	101	57	54.48	44	41.48
46-55	122	62	48.78	60	45.18
56-65	136	80	56.78	57	43
66-75	127	70	53.8	57	43
Symptoms					
Watering	168	92	52.68	76	43.28
Burning	140	100	69.48	40	26.48
Redness	97	43	42.28	54	53.69
Blurring	81	42	49.78	39	46.18

Low TFBU was present in 56.18% patients, 36.48% patients were present with low results of Schirmer's test (five millimeter or shorter), 34.0% patients were present with fluorescein scoring of one or higher & 46.78% patients were present with anomalous anatomic features of Meibomian glands as well as mucous threads (Table-4).

TBUT		Age Group			
		36-48	49-63	64-76	
Low TBUT	Male	No	37.0	58.0	46.0
		Percent	22.48	29.00	28.78
	Female	No	32.0	40.0	37.0
		Percent	19.00	19.48	22.78
Normal TBUT	Male	No	53.0	44.0	35.0
		Percent	33.00	21.58	21.38
	Female	No	29.0	44.0	31.0
		Percent	17.00	21.58	18.78
Total			151.0	186.0	149.0

Total 24.68% patients were present with definite depression, with score on SGDS-K as eight or greater. The group of patients with depression displayed lesser TBUT, Schirmer test was present with high oxford score. The previous history of the family about Dry eye disease, habit of cigarette smoking, errors of refractions, use of computer and level of income have association with the depression among patients of Dry Eye disease.

DISCUSSION:

Depression is an adverse condition of life. The depression in late life in the cause of high morbidity as well as mortality. The occurrence of depression is very common in the patients suffering from dry eye [11]. One of the most sensitive body part is cornea and it is present with rich innervation [12]. The low tolerance to pain by cornea is due to the dry eye disease [13]. dry eye disease decreases the QoL level and influences 4.0% to 32.0% population of elder age in whole world [1]. In current research work, 28.28% patients appeared with suffering from dry eye. This is in consistent with another work which describes that global occurrence of the dry eye disease is 15.0% whereas it is greater than 28.0% in Asia [14]. The incidence of dry eye increases with the increase of age. Studies from past have described that danger of dry eye diseases is from 1.54 to 1.83 times greater in female patients as compared to male gender. But in current work, male patients outnumbered the female patients [15].

There is effect of hormones on tear film as well as ocular surface [16]. Majority of the patients were from city areas which is similar to one research work conducted in South Korea describing the high incidence of dry eye in the city regions [17]. Addiction to smoking is the cause of inducing non-stable tear film [18]. The symptoms of dry eye disease as irritation, dryness & tiredness were major reasons for decreased QoL and routine activities [19]. In some research works, the range of occurrence in female patients was high in comparison with female patients [20]. A research by Uchino stated that greater than four hours of computer use has association with the dry eye disease [21].

The symptoms of depression were available in the groups of patients with elder age in this research work similar to other research work. Galor [22] recorded an association between dry eye & depression, similar to this current research work. Data in this field showed that there is association between symptoms of dry eye with the status of mood [23]. Vriezokolk stated that tiredness, depression & pain were frequent in the patients suffering from Sjogren syndrome as well as dryness of mouth [24]. Lid plugging was present in 46.78% patients of dry eye in this research work which is a main reason behind dry eye disease [25]. Dry eye disease is common with some disease of hereditary like Tp-2 diabetes & abnormalities of autoimmunity [26].

CONCLUSION:

There is no training of ophthalmologists regarding aspects of mental health. So, there is need of some basic knowledge about the complication of depression in the patients of dry eye disease. The findings of this research work showed that there are association of depression with the symptoms of dry eye & decreased tear formation. There is requirement of screening for depression & proper administration for the patients suffering from dry eye disease.

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