

## Use of isotretinoin to decrease recurrence of chalazion

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### الخلاصة:

يعتبر الكيس الدهني من الامراض الشائعة في العراق ويحدث نتيجة وجود انسداد او خلل في عمل الغدد الدهنية في جفن العين تتمثل اعراضه بتورم في الجفن مع احمرار والم احيانا اضافة الى حدوث أخطاء انكسارية نتيجة ضغط الكيس الدهني على قرنية العين . تكون الاستجابة للعلاج التقليدي والمتمثل بالقطرات و المراهم غالبا ضعيفه فيلجأ المريض الى التدخل الجراحي, بالامكان تجاوز هذه الصعوبات باستعمال الايزوترينتيون (احد مشتقات فيتامين أ) بشكل حبوب عن طريق الفم , الايزوترينتيون علاج معروف و معتمد من قبل اطباء الامراض الجلدية في علاج الامراض المتعلقة بالغدد الدهنية كالاكزيما علاوة على مصادقة منظمة الادوية العالمية باعطاءه تحت اشراف الطبيب , اجريت هذه الدراسة خلال سبعة و عشرون شهرا من ايلول 2014 - كانون الثاني 2017 في مستشفى الديوانية التعليمي (شعبة العيون) في محافظة الديوانية وتضمنت الدراسة 110 مريض يعانون من ظهور الكيس الدهني في جفن العين بشكل متكرر , تراوحت اعمار المرضى 17- 35 عام بينهم اناث 63, ذكور 47 وقد اعطي كل منهم الايزوترينتيون عن طريق الفم كمية الجرعة 20ملغم ( لمدة 10-12) اسبوع ( تم استثناء المرضى الذين لم يلتزموا بالمتابعة الطبية من الدراسة).

ثم المتابعة خلال ستة اشهر الى سنة من تاريخ اعطاء العلاج في قسم العيون في المستشفى في حال ظهور الكيس الدهني ومعظم المرضى كانت استجابتهم جيدة متمثلة بتنظيم عمل الغدد الدهنية في جفن العين وتخفيف حالات الالتهاب التي تؤدي الى ظهور الكيس الدهني وايضا استقرار في ترطيب قرنية العين (تم استثناء النساء الحوامل او من يرغبن بالانجاب من الدراسة كون العلاج مضر بالجنين).

### Abstract:

Chalazion; is a nodular swelling occur as a result of accumulation of sebaceous secretions from abnormally functioned sebaceous glands situated in the eye lid causing ocular surface problems like dryness , irritation and refractive error due to pressure effect on the cornea in addition to cosmetic blemish ,topical treatment usually ineffective so we do surgical drainage . isotretinoin is one derivatives of retinol a chemical name of the essential micronutrients vitamin A which have important role in human reproduction and development in addition this drug is well known by dermatologist and it is commonly used for treatment of seborrhea and other skin problems related to sebaceous glands.

This present cross sectional study was done at AL-Diwaniah teaching hospital (ophthalmology department) at AL-Diwaniah city from September 2014- January 2017 ,110 patients (63 female,47 male) ,between 17-35years old are involved in this study attend ophthalmological department complaining from recurrent (or multiple) chalazion ,those patients had been given isotretinoin orally a dose of 20 mg/day for 10 - 12 weeks and followed for 6-12 months for re appearance of chalazion the result show decrease in the recurrence rate of chalazion with improvement in the tear film quality and ocular lubrication.

## Introduction

chalazion (meibomian cyst) is a chronic, sterile, granulomatous inflammatory lesion caused by retained sebaceous secretions leaking from the meibomian or other sebaceous glands into nearby stroma (1) , risk factors for chalazion are include:

- 1.Acne rosacea
- 2.Chronic blepharitis
- 3.Seborrhea
- 4.TB
- 5.viral infection(8)

Histopathology : meibomian glands are sebaceous glands located in the tarsal plate of the eyelid their secretions include polar and non- polar lipid which are components of tear film(7); chalazion is a lipogranuloma of meibomian glands and some times of Zeis glands caused by retained sebaceous secretions give rise to lipogranulomatous inflammatory reaction with extracellular fat deposition surrounded by lipid laden epithelioid cells, multinucleated giant cells and lymphocytes(8). also present are admixture of other cells including macrophage, neutrophils and plasma cells .it must be emphasized that ,basal cell, squamous cell, and sebaceous cell carcinoma can

masquerade as chalazion, the histopathological examination of persistent , atypical, or recurrent chalazion that occur mostly in old age people and associated with blepharoconjunctivits therefore quiet important(9,2).Treatment of chalazion either medical(represented by topical drops and ointment) usually associated with poor response, or intralesional triamcinolone injection which can lead to scarring and depigmentation(2) and surgical which is uncomfortable in case of recurrent chalazion. Retinol compounds ;mass spectra of all-trans isomers of retinol (vitamin A). Isotretinoin:3-cis retinoic acid , brand name accutane ,sortert mechanism of action not well known , but thought to act by inhibit sebaceous glands function and keratinization, it influence cell- cycle progression and cellular differntiation , cell survival and apoptosis can result in significant reduction in sebum formation (3). A dose of 20mg\day reduce sebum excretion by order of 90% within 6 weeks it reduce the size of pilosebaceous ducts and for this reason it used for treatment of acne vulgaris and seborrhea(3,10) ,now we introduce it for treatment of recurrent chalazion as the target is the same histologically.

### Patients and methods:

The study done on 110 patients between 17-35 years old ,63 females and 47 males, complaining from recurrent chalazion had been examined and followed at Al- Diwaniah teaching hospital ,ophthalmology department.

The work up include:

A .careful medical history regarding the time of onset of the complaint and rate of recurrence, history of associated systemic disease or any coetaneous problems

B .ophthalmological examination involve visual acuity and slit lamp examination .

39 from male show no recurrence of chalazion during 6-12 months follow up involving monthly visit to ophthalmological department and 46 among females show no recurrence on the same period and the same follow up regimen ,all these patients had been given

isotretinion 20mg \day a minimum dose regarding a recommended by FDA for treatment of acne vulgaris, seborrhea and other sebaceous gland disorders.

Side effects of this drug which involve dry mouth and nausea are tolerated by most of the patients , also the drug carry teratogenic effect for this no pregnant female or a female who willing to get pregnant are involved in the study .

Follow up of these patients involving slitlamp examination of the lid which show tear film stability ,improved ocular hydration and regulation of meibomian gland function ; comfortable outer ocular surface conditions .

Patients also getting better vision as the mechanical effect of chalazion on the cornea had been released so no more pressure which can cause astigmatic refractive error.

### Results:

The numbers of patients in different categories are explained in the following tables:

Table no.1 classification of studied group according to gender and age :

class	No.	%
male	47	(42.7%)
female	63	(57.3%)
17-25 years(age)	64	(58.2%)
25-35years(age)	46	(41.8%)
total	110	

This group of patients haphazardly presented to ophthalmology department complained from recurrent chalazion , number of female 63(57.3%) more than male 47(42.7%) because females had many physiological changes occur in their

bodies due to hormonal variations that female face like menstruation and child birth, the age group more affected with chalazion is at range 17-25 years this higher incidence(58.2%) as compared with (41.8%)in the other group 25-35 years .

Table no.2 classification according to response to isotretinoin:

Class	No.	%
male	39\47	83%
female	46\63	73.01%
17-25 years	54\64	84.4%
25-35 years	31\46	67.4%
Total no. of responded patients	85 \110	77.3%

the results in table 2 showed a response to isotretinoin( derivatives of vitamin A)which had been given with of dose 20mg for 10-12 weeks with follow up for 6-12 months for re appearance of chalazion ; response is good in both gender with relatively better response in male patients ( 83%) in comparison with female(73%) ,also the response is good at different age spectrum (17-25 years is 84.4%),(25-35years is 67.4%)as far as

### Discussion:

The advantage of this study emerge from the need for less traumatic, more comfortable and more fruitful treatment for recurrent chalazion. Chalazion is retained sebaceous secretions in an abnormally functioned sebaceous gland situated in the lid (meibomian glands or gland of zeis)leading to formation of this

there is adequate compliance with treatment.

the age of studied group more at range 17-25 years as the incidence of chalazion more at this age so the effectiveness of treatment not decreased with increase age and can be given at any age under direct doctor observation.

nodular swelling which had a visual and cosmetic outcome(8).

isotretinoin which is one of vitamin A nutritional derivatives have an important role in cell function and apoptosis target sebaceous glands which are blamed in the pathogenesis of chalazion, this drug is already given to patients suffering from acne vulgaris and seborrhea for the same mode of action (10). the main advantage

of isotretinoin is that it is the only acne therapy that is not open ended (i.e. that leads to remission which may last months to years) (4).

As we mentioned above the group of patients randomly chosen but the idea is to involve patients with different age and gender to see how the treatment is effective.

A group of 110 patients given this drug for 10-12 weeks, dose 20mg/day showed improvement in their complaint for about 6-12 months from time of giving isotretinoin, before that they were suffering from multiple and recurrent chalazions which cause cosmetic and ocular complications.

Among these groups of patients the response in male patients was better than in female and this could be due to hormonal disturbance the female could be suffering from which involved menstruation and other related problems (in the beginning of the study we had a group of females complain from polycystic ovarian syndrome had been excluded from the study as this can affect the response to treatment; unless treated), otherwise the females are more concerned about cosmetic problems than males.

Studied samples involve two age spectrums 17-25 years and 25-35 years given the same dose of treatment, both had a good response but the incidence of chalazion was more at 17-25 years due to hormonal changes that occur during puberty and reflect on the skin and then show higher incidence of response to the treatment.

Patients included in this study are suffering from recurrent and multiple chalazions for which the ordinary treatment by topical medications give poor results, use of intralesional triamcinolone injection not well tolerated by most patients in addition to its side effects like depigmentation made it less pleasant and finally the surgical intervention which is traumatic and not comfortable, so we advise to start isotretinoin as a safe alternative under direct doctor observation, the most important point we can achieve is patient compliance. Most of the side effects of this drug are dose dependent like psychological effects such as depression, and dry skin, lips and nasal mucosa which can be treated by moisturization (4).

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