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Oral azithromycin as the systemic treatment of choice in the treatment of Meibomian gland disease

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Abstract
Background/Aims: To asses the efficacy and safety of oral Azithromycin when compared with oral doxycycline patients with Meibomian Gland Dysfunction (MGD) who has failed to respond to prior conservative management.
Methods: 30 Patient with MGD were randomly assigned to receive either oral 3 days Azithromycin (500mg/ day) or 3 month Doxycycline (100mg/day). There were 20 Females and 10 males average age 45 years (range 20 to 55) They also continued eye lid warming/ cleaning and artificial tears.
Symptoms and signs are recorded prior to treatment and at 1 week, and 1 and 2momths after treatment. side effects are recorded and overall clinical improvement was categorised as excellent, good, fair and poor based on clinical features.
Results: Based on clinical observation excellent score was recorded in 20 cases (66.6%) Good in 6 cases (20%) Fair in 3 cases (10%) Poor in 1 case (3.3%).
Conclusion: This short term study proved Oral Azithromycin is a good alternative for MGD as first line systemic therapy.

Keywords: Blepharitis, Meibomian gland dysfunction, ocular surface, doxycycline, azithromycin

1. Introduction
The tarsal gland of Meibomian (glandulae tarsales) are large sebaceous glands located in the eye lids and unlike those of skin are un associated with hairs. According the Duke Elder and Wyler [1] they were first mentioned by Galenus in 200 AD and later in 1666 were described in more detail by the German Physician and anatomist Heinrich Meibom, after whom they are named. Lipids produced by Meibomian gland are the main component of the superficial lipid layr of the tear film that protects it against evaporation of the aqueous phase and is believed also to stabilize the tear film by lowering surface tension. Hence, Meibomian lipids are essential for the maintenance of ocular surface health and integrity [2]

2. Methods
The aim of the study is to asses the efficacy by comparing oral Azithromycin and Doxycycline with clinical score categorised as excellent, good, fair and poor based on clinical features. Symptoms and signs are dryness, burning, redness and itching (20 cases 66.6%) stickiness/causting, watering (3 cases 10%), light sensitivity (3case 10%), intermittent blurring vision (4 cases 13.3%). Signs included are foam in tear meniscus along lower eyelid margin (20 cases 66.6%),blocked/keratinised gland openings (3 cases 10%), inflammation of posterior lid margin, recurrent chalazion (3 cases 10%), vascularized lid margin, notching of lid margin (3cases10%), multiple signs (1 case 3.3%) 30 Patients (>20 years old) with MGD were randomly assigned to receive either oral 3 days Azithromycin (500mg/ day) or 3 month Doxycycline (100mg/day). They also continued eye lid warming/ cleaning and artificial tears this has got institutional approval and written consent was obtained from the studied individuals. Symptoms and signs were recorded prior to treatment and at 1week and 1 and 2 months after treatment. side effects were recorded and overall clinical improvement was categorised as excellent, good, fair and poor based on the clinical features symptoms and signs improved significantly in both groups, improvement of symptoms was not different between the groups. Bulbar conjunctival redness and dryness and reduction of foam discharge in tear film is significantly better in Azithromycin group.

The Azithromycin group showed a significantly better overall clinical response. Mild gastrointestinal side effects were not significantly different between groups expect for second visit, when Doxycycline group had significantly more side effects Results. Based on clinical observation excellent score was recorded in 20 cases (66.6%) Good in 6 cases (20%) Fair in 3 cases (10%) Poor in 1 case (3.3%) in a case of Acne Rosacea with facial telangiectasia in an axial distribution Doxycyclines group had 5 case (16.6%) missed dose more than once, no such compliance issues with azithromycin group.

3. Discussion

MGD occurs as a result of progressive obstruction of MG orifices due to keratinization, with reduction of delivery to ocular surface and increased inflammation of eyelid characterized by hyperemia of eyelid margins and tarsal conjunctival surface the inflammatory tear film components in dry eye syndrome and blepharitis are increasingly being recognized [3], leading to combination treatment without lubricants and occasional courses of topical steroids. oral Tetracyclines and Doxycyclines have been the traditional systemic treatment of blepharitis and MGD inhibiting bacterial lipase production and reducing fatty acids, However the relatively long duration of tetracycline and adverse side effect profile means many patients struggle to complete the prescribed course [4] recent reports on positive effects on ocular lipids from azithromycin induced phospholipidosis are seen in articles [5]

Azithromycin is a semi-synthetic macrolide antibody chemically related to erythromycin and clarithromycin. as single oral dose of azithromycin has been shown to provide prolonged high levels after 14 days in drug targeted ocular tissues, to decrease inflammatory cytokines and euppress production of proinflammatory mediators. good intracellular penetration and the long Half-life of azithromycin can provide an effective antimicrobial, anti-oxidant and a favourable immune-modulatory effect without the compliance issues of long term use [6]. Hence we wanted evaluate our use of oral azithromycin patients with MGD other study reports objective improvement of ocular surface and lid margin, more stable tear film, less corneal staining. The underlying mechanism of blepharitis are not completely understood, and the role of bacterial colonization is controversial. Our case series shows a reasonable subjective and objective response to oral azithromycin in the treatment of MGD. There were no compliance issues and no adverse sid effects reported. A short 3 day course of oral azithromycin appeared to be more acceptable than a prolonged course of oral doxycyclines in this patient populations with obvious compliance benefits cheaper than 3month doses. Azithromycin has a additional treatment advantages such as potent anti-inflammatory properties, antibacterial with a high efficacy spectrum, daily dose pharmacokinetics and favourable eyelid tissue penetration it also shows to directly increase lipid accumulation and promote terminal differentiation of human Meibomian gland cells in vitro (doxycyclines) and it this cellular function that is felt to contribute to greater efficiency than doxycycline in treating MGD [7]. Increasing evidence documenting benefit in children is available with azithromycin.

Further studies on larger groups with larger follow up periods would help determine its long term benefits and complications AAO stated that there is no level 1 evidence to support the use of oral antibodies in management of ocular surface disease [8]

4. Conclusions

Although both azithromycin and doxyclines improved the symptoms of MGD.3 day oral azithromycin is recommended for its better effect on improving the signs, better results overall clinical response and shorter duration of treatment. More research is needed to see if oral azithromycin including pulse treatment of refractory cases will displace the doxycyclines and even become the first line of treatment. We agree with the Cochrane review conclusions that more research is needed in this subject. We wait for more definite studies to be performed [9]

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Conflicts of interest-

There no conflicts of interest

5. References

1. Duke-Elder S, Wyler KL. The anatomy of the visual system London henry Kempton. 1961, 577.
2. Bron AJ, Tiffiney JM *et al*. Functional aspects of the tear film lipid layer exp. eye res 2004; 78:347-360.
3. BCSC Section 8 external disease and cornea. 65-69.
4. A Hity A *et al*. oral azithromycin on systemic treatment of choice in the treatment of MGD clin. exp. Oph. 2016; 44:199-201.
5. Lim Y *et al*. using azithromycin induced phospholipids to promote ocular surface health Toxicology. 2014; 320:1-54
6. Green JB *et al*. oral azithromycin for treatment of meibonitis JAMA Ophthalmology. 2014; 132:121-2.
7. Kashkouli MB *et al*. oral azithromycin vs doxycylines BJO. 2015; 99:199-204.
8. Wladis EJ. oral antibiotics for MGD a report by AAO Ophthalmology. 2016; 123:492-6.
9. Lindsely K *et al*. intervention for chronic blepharitis – cochrane data base sys rev. 2012, 16.