

Interferon alpha-2b in giant ocular surface squamous neoplasia

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Key words: Conjunctival neoplasia, interferon, squamous neoplasia

Interferon alpha-2b has become an ideal topical chemotherapeutic agent to treat selective cases of ocular surface squamous neoplasia (OSSN) due to its efficacy and low toxicity. We present a case series in which interferon alpha-2b achieved primary immunoreduction or immunotherapy in giant OSSN avoiding or minimizing the need of extensive surgery.

Case Report

A total of five patients (mean age of 69-year-old) with giant OSSN were managed with interferon alpha-2b. Three patients received topical therapy (1 million IU/mL) four times/day for a minimum of 3 months for immunotherapeutic purposes as a treatment protocol in our institution [Figs. 1 and 2] and two patients received subconjunctival therapy (3 million IU/mL) single dose/week for 1 month for immunoreduction [Fig. 3]. The median time to resolution was 5 months (range, 1.5–6 months) and the median follow-up was 22 months (range, 6–28 months). Despite the dramatic clinical response, all patients continued with topical interferon alpha-2b at least 1 month beyond complete clinical resolution. The two cases, in which immunoreduction was successfully achieved, were scheduled for a lesion excision with a no-touch technique followed by cryotherapy and amniotic membrane to cover the large excision area. There has been no recurrence during follow-up.

Discussion

Giant OSSN refers to a single tumor that measures >15 mm in basal diameter or involving >180 of limbus (6 h or half the limbal circumference). Most OSSN lesions appear in the bulbar conjunctiva (93%).^[1] In this case series, the cornea was the most involved area in 60% of the cases, whereas in the other 40%, the lesion was primarily located in the bulbar conjunctiva (40%).

Interferons are naturally occurring glycoproteins that are released by various types of immune cells and activate proteins by binding to the cell surface of their targets. Specifically to OSSN, interferon alpha-2b has been used off-label as topical eye drops and as subconjunctival injections with minimal side effects.^[2,3] The use of subconjunctival injections is a well-documented treatment option, with good outcomes, low rates of recurrence, and only local side effects at the moment of the injection.^[2]

Reported recurrence rates after topical or injected interferon alpha-2b are between 0% and 29% with follow-ups ranging from 2 to 28 months, which tends to be lower than those with excisional biopsy followed by cryotherapy (5–33% with negative margins and up to 56% with positive margins).^[1,4]

The mean resolution time in this case series was 5 months. The longer period of resolution in comparison to other studies suggests that the time of resolution correlates with the larger

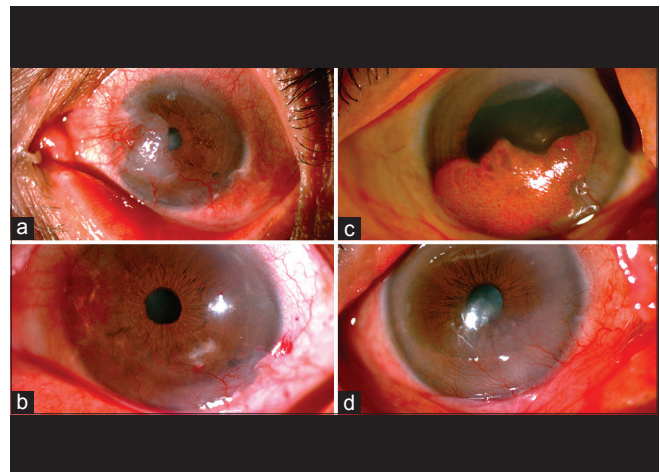


Figure 1: (a) A 53-year-old male before receiving topical interferon alpha-2b for a giant ocular surface squamous neoplasia and (b) 3 months after treatment. (c) A 76-year-old female before topical interferon alpha-2b and (d) 6 months after treatment with important clinical improvement

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	DOI: 10.4103/0301-4738.185620

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Manuscript received: 28.10.15; **Revision accepted:** 29.04.16

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Cite this article as: Hernandez-Bogantes E, Serna-Ojeda JC, Lichtinger A, Graue-Hernández EO. Interferon alpha-2b in giant ocular surface squamous neoplasia. *Indian J Ophthalmol* 2016;64:393-4.

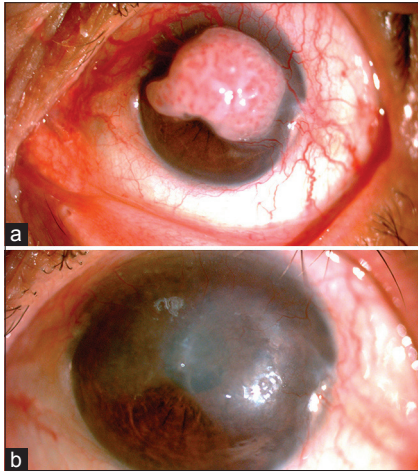


Figure 2: (a) A 62-year-old female before topical interferon alpha-2b for a giant ocular surface squamous neoplasia with important extension to the cornea. (b) Same patient after 2 months of treatment showing resolution

extension of a giant OSSN.^[4,5] Even though the duration for which topical interferon therapy should be continued beyond tumor resolution is not well known, our patients continued with topical treatment at least 1 month beyond clinical resolution.

Some advantages of the use of topical interferon alpha-2b are its limited ocular toxicity, the patient's tolerability, and the preservation of limbal stem cells. Due to its off-label use, this medication needs to be compounded, and counseling of the patient is important in terms of the need of refrigeration and compliance of the treatment.

This case series, adds to the body of the literature of treatment of giant OSSN, with documented follow-up and representative clinical images. In conclusion, interferon alpha-2b can successfully reduce or achieve complete resolution of giant OSSN, thus avoiding the patient a more extensive surgical procedure with its known risks and complications.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

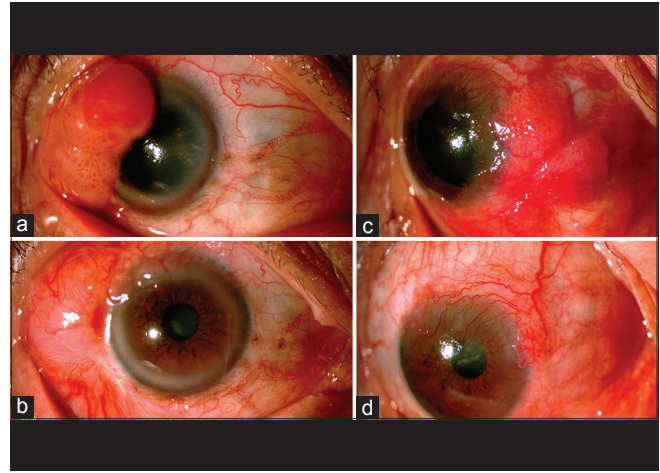


Figure 3: Two patients received subconjunctival therapy for immunoreduction of giant ocular surface squamous neoplasia. Clinical images for the first patient (a) before treatment, (b) after treatment, and for the second patient (c) and (d), respectively

References

1. Kim HJ, Shields CL, Shah SU, Kaliki S, Lally SE. Giant ocular surface squamous neoplasia managed with interferon alpha-2b as immunotherapy or immunoreduction. *Ophthalmology* 2012;119:938-44.
2. Karp CL, Galor A, Chhabra S, Barnes SD, Alfonso EC. Subconjunctival/perilesional recombinant interferon alpha2b for ocular surface squamous neoplasia: A 10-year review. *Ophthalmology* 2010;117:2241-6.
3. Nanji AA, Moon CS, Galor A, Sein J, Oellers P, Karp CL. Surgical versus medical treatment of ocular surface squamous neoplasia: A comparison of recurrences and complications. *Ophthalmology* 2014;121:994-1000.
4. Galor A, Karp CL, Chhabra S, Barnes S, Alfonso EC. Topical interferon alpha 2b eye-drops for treatment of ocular surface squamous neoplasia: A dose comparison study. *Br J Ophthalmol* 2010;94:551-4.
5. Shah SU, Kaliki S, Kim HJ, Lally SE, Shields JA, Shields CL. Topical interferon alfa-2b for management of ocular surface squamous neoplasia in 23 cases: Outcomes based on American Joint Committee on Cancer classification. *Arch Ophthalmol* 2012;130:159-64.