Authors:

Magafurov Dinislam Azamatovich – PhD student of the department of medical rehabilitation with courses of neurosurgery and acupuncture IAPE, Bashkir state medical University. Address: 450008, Russian Federation, Ufa, 3 Lenina str. E-mail: magafurov@hotmail.com.

Pengfei Wu – resident of the Department of Neurosurgery, Harbin medical University. Address: China, Heilongjiang Province, Nangang District, Harbin, 157 Baojian Road, 150081.

Jinquan Cai - PhD in Medical sciences, assistant lecturer of the Department of Neurosurgery, Harbin medical University. Address: China, Heilongjiang Province, Nangang District, Harbin, 157 Baojian Road, 150081. E-mail: jcl6688@163.com.

Safin Shamil Mahmutovich – Doctor of medical science, Prof., Head of the Department of medical rehabilitation with courses of neurosurgery and acupuncture IAPE, Bashkir state medical University Address: 450008, Russian Federation, Ufa, 3 Lenina str. E-mail: safinsh@mail.com.

Chuanlu Jiang – Doctor of medical science, Prof., Head of the Department of Neurosurgery, Harbin medical University. Address: China, Heilongjiang Province, Nangang District, Harbin, 157 Baojian Road, 150081. E-mail: jcl6688@163.com.

REFERENCES

1. Repression of Stress-Induced LINE-1 expression protects cancer cell subpopulations from lethal drug exposure / G.D. Guler [et al.] // Cancer cell. – 2017. – Vol. 32(2). – P. 221-237.
2. Darmon, E. Bacterial genome instability / E. Darmon, D.R. Leach // Microbiol Mol Biol Rev. – 2014. – Vol. 78(1). – P. 1-39.
3. Groenendijk, F.H. Drug resistance to targeted therapies: deja vu all over again / F.H. Groenendijk, R. Bernards // Mol Oncol. – 2014. – Vol. 8(6). – P. 1067-1083.
4. Bodak, M. Regulation of LINE-1 in mammals / M. Bodak, J. Yu // Biomol Concepts. – 2014. – Vol. 5(5). – P. 409-428.
5. Ye Z.J. The function of LINE-1-encoded reverse transcriptase in tumorigenesis /Z.J. Ye, Q.P. Liu //Yi Chuan. – 2017. – Vol. 39(5). – P. 368-376.
6. Hur K. Hypomethylation of long interspersed nuclear element-1 (LINE-1) leads to activation of proto-oncogenes in human colorectal cancer metastasis / K. Hur, P. Cejas // Gut. – 2014. – Vol. 63(4). – P. 635-646.
7. Grow, E.J. A fine LINE-1 in mouse embryonic chromatin regulation / E.J. Grow // Nat Genet. – 2017. – Vol. 49(10). – P. 1418-1419.
8. Jeong, S. Tumoral LINE-1 hypomethylation is associated with poor survival of patients with intrahepatic cholangiocarcinoma / S. Jeong, K. Lee, // BMC Cancer. – 2017. – Vol. 17(1). – P. 588.
9. Jachowicz, J.W. LINE-1 activation after fertilization regulates global chromatin accessibility in the early mouse embryo / J.W. Jachowicz, X. Bing, // Nat Genet. – 2017. – Vol. 49(10). – P. 1502-1510.
10. Jiang, A.C. Erratum to: LINE-1 is preferentially hypomethylated within adenomatous polyps in the presence of synchronous colorectal cancer / A.C. Jiang, L. Buckingham // Clin Epigenetics. – 2017. – Vol. 27. – P. 9-76.
11. Kupcinskas, J. LINE-1 hypomethylation is not a common event in preneoplastic stages of gastric carcinogenesis / J. Kupcinskas, R. Steponaitiene // Sci Rep. – 2017. – Vol. 7(1). – P. 4828.
12. Feng, Y. Deamination-independent restriction of LINE-1 retrotransposition by APOBEC3H / Y. Feng, M.H. Goubran // Sci Rep. – 2017. – Vol. 7(1). – P. 10881.

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Wang Shudan, Zhang Hong

INTENSE PULSED LIGHT AS A NEW TREATMENT FOR BLEPHAROKERATOCONJUNCTIVITIS: A CASE REPORT

Ophthalmology hospital of First Affiliated Hospital of Harbin Medical University, Harbin, China

Blepharokeratoconjunctivitis (BKC) refers to a series of conjunctival and corneal disease secondary to blepharitis. Intense pulsed light (IPL) devices contain high-intensity light sources, which emit polychromatic light from 515 nm to 1200 nm. We report the effect of IPL in three cases of BKC.

The first case presented eyelid congestion; crusting and scaling at the eyelash root; meibomian gland obstruction and conjunctival hyperemia in both eyes. The left eye presented old central corneal scarring with neovascularization. BKC was diagnosed. The male patient was treated with three times of IPL and traditional treatment. The second case presented scaling and sleeve-form crusting at the eyelash root; meibomian gland arranged irregularly with opening obstruction; marked conjunctival hyperemia in both eyes. The left eye presented opacities with much neovascularization. In vivo confocal microscopy and optical microscopy examination of eyelid lash showed there were lots of Demodex folliculorum mites in the eyelash follicles. Demodex folliculorum mitesin festation and BKC were diagnosed. The female patient was treated with once of IPL and traditional treatment. The third case presented eyelid congestion; meibomian gland pouting and capping; conjunctival hyperemia and marginal infiltrates of cornea with pannus formation in both eyes. BKC was diagnosed. The female patient was treated with twice of IPL and traditional treatment.

The first case recovered within 17 days. The second case recovered within 23 days. The third case recovered within 14 days. And their ocular surfaces were stable at 1-month follow-up.

Compared with topical medicine treatment of BKC requiring at least 1 month, IPL treatment shortened the course of BKC.

Key words: blepharokeratoconjunctivitis (BKC); treatment; intense pulsed light.

Blepharokeratoconjunctivitis (BKC) refers to a series of conjunctival and corneal disease secondary to blepharitis. Intense pulsed light (IPL) devices contain high-intensity light sources, which emit polychromatic light from 515 nm to 1200 nm. We report the effect of IPL in three cases of BKC [1].

Case report

The first case was a 10-year-old boy. He presented eyelid congestion; crusting and scaling at the eyelash root; meibomian gland obstruction and conjunctival hyperemia in both eyes (Fig. 1).

The left eye presented old central corneal scarring with neovascularization. BKC was diagnosed. He was treated with three times of IPL and traditional treatment. The corneal scarring and neovascularization reduced after first IPL treatment and he recovered within 17 days (Fig. 2).

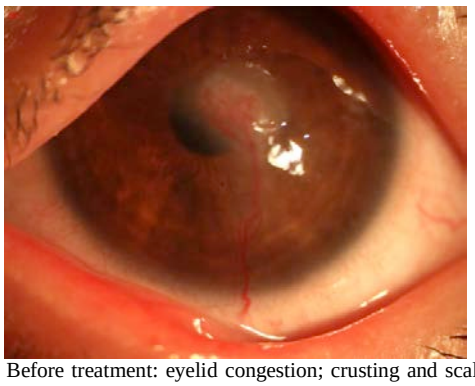

Fig. 1. Before treatment: eyelid congestion; crusting and scaling at the eyelash root, meibomian gland obstruction and moderate conjunctival hyperemia; there was presence of old central corneal scarring with neovascularization in left eye

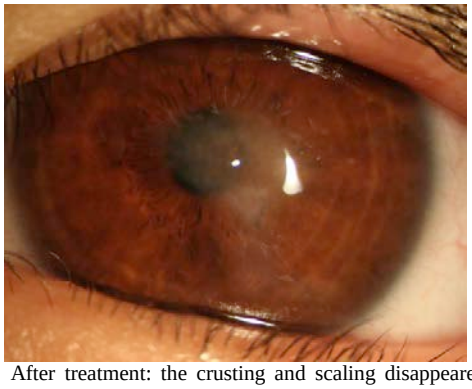

Fig. 2. After treatment: the crusting and scaling disappeared; the obstruction of meibomian gland disappeared ; corneal neovascularization was faded away and the lesion reduced

The second case was an 18-year-old girl. She presented scaling and sleeve-form crusting at the eyelash root; meibomian gland arranged irregularly with opening obstruction; marked conjunctival hyperemia in both eyes. The left eye presented opacities with much neovascularization (Fig. 3).

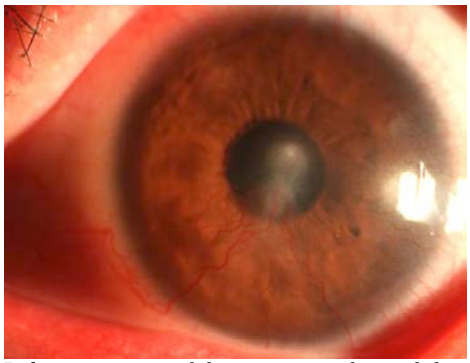

Fig. 3. Before treatment: eyelid congestion; scaling and sleeve-form crusting at the eyelash root, meibomian gland arranged irregularly with opening obstruction; marked conjunctival hyperemia and opacities covered the pupil accompanied with much neovascularization in left eye

In vivo confocal microscopy and optical microscopy examination of eyelid lash showed there were many. Demodex folliculorum mites in the eyelash follicles. Demodex folliculorum mitesin festation and BKC were diagnosed. She was treated with once of IPL and traditional treatment. She recovered within 23 days (Fig. 4).

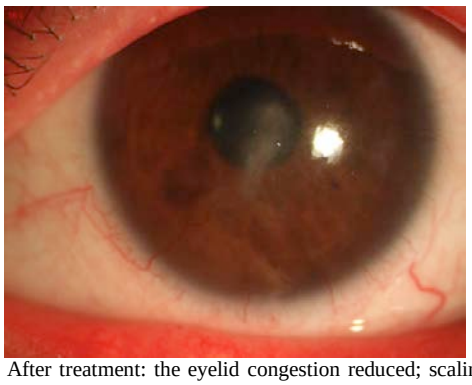

Fig. 4. After treatment: the eyelid congestion reduced; scaling and sleeve-form crusting disappeared; the obstruction of meibomian gland reduced; conjunctival hyperemia and corneal neovascularization disappeared; the opacities reduced

The third case was a 46-year-old woman. She presented eyelid congestion; meibomian gland pouting and capping; conjunctival hyperemia and marginal infiltrates of cornea with pannus formation in both eyes (Fig. 5).

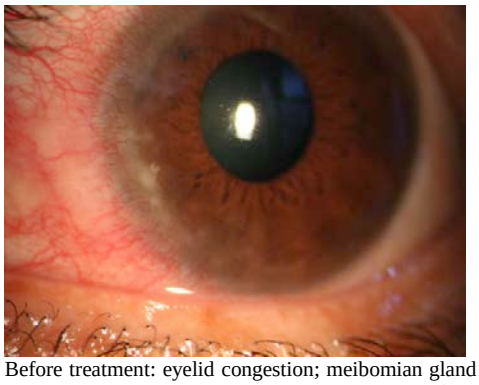

Fig. 5. Before treatment: eyelid congestion; meibomian gland pouting and capping; conjunctival hyperemia and marginal infiltrates of cornea with pannus formation in both eyes

BKC was diagnosed. She was treated with twice of IPL and traditional treatment. She recovered within 7 days (Fig. 6).

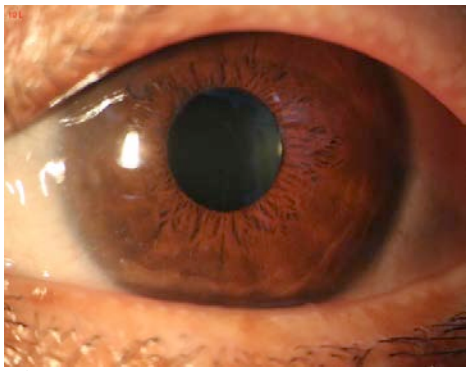

Fig. 6. After treatment: eyelid congestion and conjunctival hyperemia disappeared; meibomian gland pouting and capping disappeared; the pannus faded away

Discussion

The main clinical manifestations of BKC consist of inflamed eyelids, anterior lid margin telangiectasia, accumulations of hard, fibrinous and crusting scales around the base of the cilia. In chronic cases, there are other common symptoms such as ulceration, lid notching, thinning or loss

of lashes, or misdirection of lashes. Conjunctival alteration includes mild to moderate papillary and follicular hypertrophy of the palpebral conjunctiva. In acute exacerbations, additional inferior corneal involvement (punctate epithelial erosions, marginal infiltrates, sterile marginal abscesses) is also seen [2]. BKC is the result of an underlying cytokine and inflammatory-mediated process affecting both the meibomian glands and the ocular surface [1]. It finally leads to a series of inflammatory reactions and tear film instability. Tetz [3] suggested patients with BKC could present a spectrum of inflammatory and immunologic corneal disorders: punctate epithelial erosions represent an effect of bacteria exotoxins; marginal infiltrates and ulcers represent an antigen–antibody reaction; phlyctenules indicate a delayed hypersensitivity reaction. Those graded with mild disease had only corneal epithelial involvement without stromal scarring, for example, punctate epithelial erosions or superficial punctate keratitis; conjunctival hyperaemia and mild conjunctival stromal oedema; active peripheral new vessels involving ≤ 3 clock hours; mild papillary hyperplasia and small follicles (<5). Moderate disease was defined as the additional presence of corneal stromal scarring, with or without vascularization; marked conjunctival hyperaemia and conjunctival stromal oedema; significant tissue thickening; active peripheral new vessels involving >3 clock hours or extending to the pupil margin; moderate papillary hyperplasia and follicles (5-10). Severe disease was defined as corneal scarring with significant stromal thinning; conjunctival or corneal ulceration; severe conjunctival oedema; active new vessels extending to central zone; marked papillary hyperplasia and follicles (>10) [4-6]. The treatment for blepharokeratoconjunctivitis includes eyelid hygiene, warm compresses, topical and systemic antibiotics, topical and systemic immunosuppression. By using such treatments remission can be successfully achieved within 3 months. Currently, there is a lack of an effective, standardized treatment regimen for this disease, with potentially sight-threatening complications like amblyopia, thinning, and perforation and treatment-related complications such as steroid-induced glaucoma, cataracts, ulcers, and reactivation of viral keratitis [4] and some systemic adverse effects like phototoxicity and gastrointestinal disturbance [7].

Intense pulsed light (IPL) devices contain high-intensity light sources, which emit polychromatic light extending from the visible (515 nm) to the infrared spectrum (1200 nm)[8]. IPL has been used in dermatology practices for several years as a treatment for rosacea and acne [9].The pivotal mechanism of IPL involves the principal of selective photothermolysis, in which light energy that comes in contact with tissue is preferentially absorbed by a chromophore and converted into heat. Appropriate wavelengths can be selected for different targets depending on the absorption behavior and the penetration depth of the light emitted, and specific filters can be chosen to limit the delivery of wavelengths to the treatment area resulting in selective thermal delivery [8]. In 2002, Rolando Toyos discovered the positive ophthalmic effects of IPL on his patients who underwent treatment for facial rosacea [9]. It shows IPL is an effective treatment for patients with evaporative dry eye disease that can significantly reduce symptoms and improve meibomian gland function [10]. A prospective, double-masked, placebo-controlled, paired-eye study by Jennifer P. Craig showed IPL improved tear film quality. The pulse intensity ranged from 9 to 13 J/cm^2 and was inversely related to the individual skin phototype level as determined by the Fitzpatrick grading scale.

Analysis of these three patients showed that the first two cases of BKC patients are severe and of the last case is moderate. Using IPL treatment combined with topical drug treatment, it showed a good effect for these three cases of BKC. Remission occurred within 17days in the first case, 23 days in the second case and 7 days in the third case. Our observation indicated that BKC with Demodex folliculorum mites infestation is more serious and more difficult to treat. IPL is non-invasive and easy to operate that can be completed in five minutes. It can quickly reduce the corneal neovascularization and make the lesion absorbed. It can shorten the process of the disease and increase the vision more quickly compared with the traditional treatment. As BKC is chronic and recurrent, additional treatments are often required for 2 months to maintain symptom relieve. According to the feature of IPL, we suggest the mechanism of IPL for BKC is that IPL allows for selective ablation of the neovascularization and the superficial vessels. It then reduces telangiectasias and decreases inflammation of ocular surface and the meibomian glands. Another potential mechanism includes reduction of bacteria and Demodex folliculorum mites growth on the eyelids. There is also a temporary local thermal effect that warms the meibomian gland secretions. This warming effect can allow for improved manual expression of inspissated meibum within the meibomian glands after application of the light. With improved meibum secretion and viscosity, the tear film can become more stable. In conclusion, IPL therapy is a safe and effective treatment for BKC.

Although IPL has a relatively good safety profile, some ocular complications have been reported when treated without proper eye protection. It has been reported that IPL therapy could cause anterior uveitis, permanent iris atrophy and pupillary defects [11]. Therefore, it is essential for physicians to protect eyes in IPL treatment. More research is needed with more patients and longer follow-up time to assess the long-term outcomes of IPL treatment for BKC.

Authors:

Wang Shudan – Dr. Ophthalmology hospital of First Affiliated Hospital of Harbin Medical. Address: No. 23, Youzheng Street, Nangang District, Harbin 150001, China. E-mail: 1153689053@qq.com.

Zhang Hong – MBBS PhD, Prof., Ophthalmology hospital of First Affiliated Hospital of Harbin Medical University. Address: No. 23, Youzheng Street, Nangang District, Harbin 150001, China.

REFERENCES

1. Ismail, A.S. Topical cyclosporin as an alternative treatment for vision threatening blepharokeratoconjunctivitis / A.S. Ismail, R. Taharin, Z. Embong // Int. Med. Case Reports. J. – 2012. – Vol. 5. – P.33.
2. Viswalingam, M. Blepharokeratoconjunctivitis in children: diagnosis and treatment / A.S. Ismail, R. Taharin, Z. Embong // British j. of ophth. J. – 2005. – Vol. 89(4). – P.400-403.
3. Tetz, M.R. Staphylococcus-associated blepharokeratoconjunctivitis: clinical findings, pathogenesis and therapy [in German] / M.R. Tetz, U. Klein, H.E. Volcker // Ophthalmologe J. – 1997. – Vol. 94. – P.186-90.
4. Teo, L. Severity of pediatric blepharokeratoconjunctivitis in Asian eyes / Teo L. [et al.] // Am. J. of ophth. – 2012. – Vol. 153(3). – P.564-570.
5. Viswalingam, M. Blepharokeratoconjunctivitis in children: diagnosis and treatment / M. Viswalingam [et al.] // Brit. J. of ophth. – 2005. – Vol. 89(4). – P.400-403.
6. Hamada, S. Childhood blepharokeratoconjunctivitis: characterising a severe phenotype in white adolescents / Hamada S. [et al.] // Brit. J. of ophth. – 2012. – Vol. 96(7). – P.949-955.
7. O'Gallagher, M. Topical treatments for blepharokeratoconjunctivitis in children / S. Hamada [et al.] // The Cochrane Library. – 2016.
8. Craig, J.P. Prospective Trial of Intense Pulsed Light for the Treatment of Meibomian Gland Dysfunction Prospective Trial of IPL for Treatment of MGD / S. Hamada [et al.] // Investig. Ophth. & Visual Science. – 2015. – Vol. 56(3). – P.1965-1970.
9. Vora, G.K. Intense pulsed light therapy for the treatment of evaporative dry eye disease / G.K. Vora, P.K. Gupta // Current opinion in ophthalmology. – 2015. – Vol. 26(4). – P. 314-318.
10. Vegunta, S. Combination therapy of intense pulsed light therapy and meibomian gland expression (IPL/MGX) can improve dry eye symptoms and meibomian gland function in patients with refractory dry eye: a retrospective analysis / S. Vegunta, D. Patel, J.F. Shen // Cornea. – 2016. – Vol. 35(3). – P.318-322.
11. Lee, W.W. Ocular damage secondary to intense pulse light therapy to the face/ W.W. Lee [et al.] // Opht. Plastic & Reconstructive Surg. – 2011. – Vol. 27(4). – P.263-265.

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А.Д. Мураталиева[1], С.Ш. Тойматов[1], Г.Я. Ибрагимова[2]

ФОРМИРОВАНИЕ ПРИНЦИПОВ ОРГАНИЗАЦИИ МЕДИЦИНСКОГО И ЛЕКАРСТВЕННОГО ОБЕСПЕЧЕНИЯ ПОСТРАДАВШИХ В УСЛОВИЯХ ЧРЕЗВЫЧАЙНЫХ СИТУАЦИЙ В КЫРГЫЗСКОЙ РЕСПУБЛИКЕ

[1]Кыргызская государственная медицинская академия им. И.К. Ахунбаева, г. Бишкек
[2]ФГБОУ ВО «Башкирский государственный медицинский университет» Минздрава России, г. Уфа

В настоящее время большинство стран мира более интенсивно стали подвергаться масштабным стихийным бедствиям, авариям, катастрофам, приводящим к масштабным материальным и людским потерям. Кыргызская Республика (КР) является потенциально опасным регионом для возникновения чрезвычайных ситуаций (ЧС) различного характера. В современных условиях в Кыргызской Республике повышается роль и ответственность органов власти в обеспечении безопасности населения и защиты окружающей среды от последствий катастроф, подготовке региона в случае возникновения ЧС. В системе оказания помощи медицинское и лекарственное обеспечение является приоритетным и должно осуществляться с помощью единой методологической основы и единых принципов**.** На основе логического и аналитического анализов международного опыта и данных научной литературы и с использованием системного подхода и экспертных мнений специалистов сформированы принципы организации медицинского и лекарственного обеспечения пострадавших в условиях чрезвычайных ситуаций в Кыргызской Республике, а также пути их реализации.

Ключевые слова: чрезвычайные ситуации, медицинская помощь, лекарственная помощь, Кыргызская Республика.

A.D. Muratalieva, S.Sh. Toimatov, G.Ya. Ibragimova

DEVELOPMENT OF PRINCIPLES OF MEDICAL AND MEDICINAL PROVISION FOR VICTIMS IN EMERGENCY SITUATIONS IN THE KYRGYZ REPUBLIC

Currently, most of the world's countries are intensively suffering from major natural disasters, accidents, catastrophes leading to great material and human losses. The Kyrgyz Republic (KR) is a potentially dangerous region for the emergency situations (ES) of different nature. In modern conditions, in KR the role and responsibility of authorities are increasing in the field of safety provision and protection of environment from catastrophes' consequences and preparation of region to ES. In the system of rendering assistance, medical and medicinal supplies are priority, which must be implemented on a single methodological basis, with unified principles. Based on logical and analytical analysis, international experience, scientific literature, using the systemic approach and