

Successful Ozone Treatment of EBV and HSV-Related Viral Urticaria

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Received: 16 March 2020; Accepted: 24 March 2020

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ABSTRACT

Urticaria is a many-sided syndrome signed by itching, itchy red swelling and/or angioedema related to: parasites, autoimmune diseases, food intolerance, stress, viruses, physical and unfound causes (idiopathic). We reported the successful Ozone treatment of two cases of viral-related urticaria-angioedema. Case 1: a 49 years-old woman also suffering from Hashimoto autoimmune thyroiditis showed a significant increase of EBVNA-Ab and EBVCA-Ab IgG (>10 times the cut-off levels). The symptom VAS was 10/10 at the start, 4/10 after the third treatment and 0/10 after ten treatments; UAS7 was 42 at the start of the therapy, fifteen after 2 weeks, 0 after 5 weeks. Case 2: a 58 years-old man was treated for 5 months in hospital with steroids and omalizumab without any clinical improvement at all. He showed a significant increase of EBVNA-Ab and EBVCA-Ab and HSV1-Ab IgG (>10 and >20 times the cut-off levels respectively). The symptom VAS was 10/10 at the start, 2/10 after the third treatment, withdrawing steroid therapy, and 0/10 after the sixth treatment; the UAS7 was 42 at the start, ten after 2 weeks, 0 after 3 weeks. The treatment was the Small Ozonized Autohemo Therapy (SOAT) (10 ml of oxygen-ozone treated peripheral venous blood was reinjected into the patient's gluteus); the treatment was repeated twice a week for 5 weeks. It's well known the ozone is the most powerful natural mean pathogen killing, including viruses and bacteria; this chemical agent is many times more active than chlorine. The used ozone maker machine was Humazone from Humares (Salute OK, Rome) allowing precise photometric ozone concentration's choice. SOAT of viral-related urticaria is effective thanks to antiviral action of ozone, acting as autovaccine.

Keywords: EBV, HSV, Viral Urticaria

Introduction

Chronic urticaria is a many-sided syndrome whose etiology intrigued many authors all over the world; the lack of an etiological diagnosis led to coin the bad epithet “spontaneous” or “idiopathic”. In the course of time it appeared more and more clear the unmet need of urticaria's endotypes classification, as well as in other immunologically mediated diseases (asthma, rhinitis). Really, just the etiological classification of urticaria is able to direct the therapy towards the right way, clarifying the pathogenetic mechanisms leading to the clinical syndrome (Radonjic-Hoesli *et al.*, 2018). The recognition of a possible

infection and/or infestation at the base of the syndrome is pivotal to choose the right treatment. At this regard, it seems not obvious to remember the mean of antibody's strength in the blood: if you have the first contact with the antigen, you'll respond with the synthesis of IgM, who after on average 2 weeks will leave the place to the IgG. But starting from the second time of challenge by the same antigen going on, an immunocompetent host will synthesize only IgG, whose strength will be higher and higher with the increasing number of reinfections. Unfortunately, many human viruses don't give a permanent immunity, because they can reinfect the same host at different times: many causes can lead to increased vulnerability to infections (imbalance of gut microbiota, stress, chronic diseases, malnutrition, immune suppressive therapy). During all the reinfections successive to the first time, the host will synthesize just IgG, and the behavior of their strength in the time will describe exactly both the history of reinfection and the therapy's efficacy. In the case of urticaria, the right interpretation of antibody's strength against viruses (EBV, CMV, VZV, HSV) is pivotal to undergo antiviral and immunomodulant therapy who can resolve the viral- induced urticaria (Zawar *et al.*, 2010). As to antiviral therapy, many drugs have been put in play to attain the viral downfall, and also the oxygen-ozone mixture has been shown to be helpful in the antiviral therapy, because its antiviral efficacy is many times stronger than chlorine (Wells *et al.*, 1991; Vaughn *et al.*, 1987). Regarding viral-induced urticaria, no one until now utilized oxygen-ozone therapy to treat viral-related urticaria.

Materials and Methods

Two patients, one 49 years old woman, also suffering from Hashimoto autoimmune thyroiditis, unsuccessfully treated with steroids and antihistamines, and a 58 years old man who was unsuccessfully treated for 5 months with steroids and omalizumab, following the EAACI guidelines (Marin-Cabanas *et al.*, 2017), showed high strength of antibodies against viruses (EBV and HSV), always more than ten times the cut-off levels. Both patients, after written informed consent, were treated with small ozonized autohemotherapy, following the guidelines of A.I.R.O. and other national and international scientific societies (Nuova FIO, ISCO3): 10 ml of peripheral venous blood were withdrawn in a syringe containing 10 ml of Oxygen-Ozone mixture having an ozone concentration of 30 µg/ml; after a gentle tilting to allow the gas dissolution in the blood (timing:30 sec.), the ozonized blood was reinjected into the patient's gluteus. The treatment was repeated twice a week for 5 weeks. The used Ozone maker machine was Humazone (Humares, Salute OK, Rome), allowing precise photometric Ozone concentration's choice.

Results

Both the patients showed a scaling down of both Symptom Visual Analogue Score (VAS) and Urticaria Activity Score evaluated for seven days (UAS7) (Zuberbier *et al.*, 2018), regarding itching, itchy

red swelling, angioedema and quality of life; the VAS and UAS7 lowering was quicker in the man (B) and the symptoms disappearance was reached in 3 weeks for the man and 5 weeks for the woman (A) (Fig. 1, Fig. 2). Both patients withdrew the antihistamine and steroid therapy, the man before that the woman, who was suffering also from Hashimoto thyroiditis. Moreover, both patients showed a significant lowering of antibody's strength against EBV (EBVCA Ab and EBVNA Ab) six months after ozone treatment (Fig. 3); the trend in increase of EBVCA/EBVNA strength ratio after ozone treatment, stronger on the woman, shows indirectly the drop in viral load (Fig. 4).

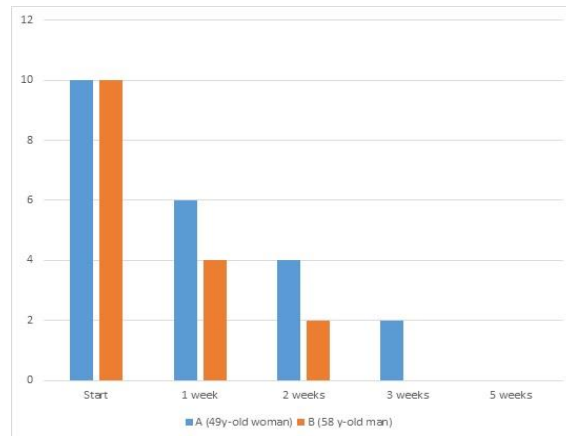


Figure 1: Symptom VAS in two cases of EBV and HSV-related urticaria successfully treated with Oxygen-Ozone therapy.

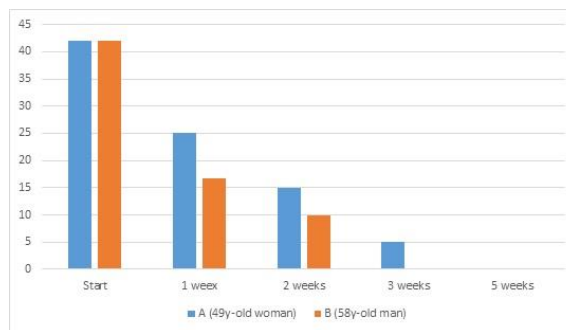
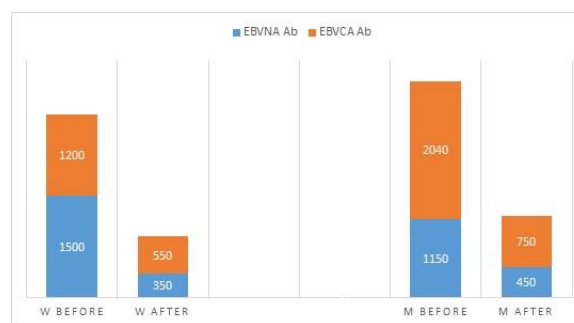


Figure 2: U.A.S.7 behaviour in two cases of EBV and HSV-related urticaria successfully treated with Oxygen-Ozone therapy.



(W=Woman; M=Man)

Figure 3: Evaluation of the inverse of Antibody's Strength against EBV in two cases of viral Induced Urticaria before and six months after Ozone treatment.

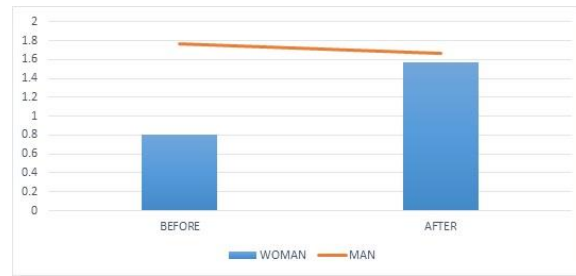


Figure 4: EBVCA/EBVNA Strength Ratio Before and after Ozone Treatment in Two Cases of Viral-Related Urticaria.

Discussion and Conclusions

The EAACI guidelines advise the treatment for chronic “spontaneous” urticaria: antihistamines, steroids and omalizumab. No one until now treated the viral-related urticaria with ozone therapy. We describe here two cases of EBV and HSV-related urticaria successfully treated with small ozonized autohemotherapy. Both the patients were yet unsuccessfully treated with the therapies advised by EAACI guidelines. Ozone has the molecular structure O₃, resulting from the transformation of 2 molecules of Oxygen in O₃ and O⁻ under its exposition to an electric discharge (like that occurs in the atmosphere when the oxygen is struck by a lightning during a thunderstorm). Now it's possible repeat this chemical reaction in medical office thanks to the exposition of the medical oxygen to an electric discharge by machines allowing precise photometric choice of ozone concentration in the oxygen-ozone mixture. The Small Ozonized Autohemotherapy (SOAT), involving the intramuscular reinjection of the patient's blood exposed to a mixture of oxygen-ozone at the concentration of 30 μ/ml, showed to be an effective treatment of two cases of viral-related urticaria. It's really well known that the ozone is the most powerful natural mean pathogen killing, including viruses and bacteria; this chemical agent is very effective in killing pathogens as viruses and bacteria, many times more active than chlorine (Bilge *et al.*, 2018; Vaughn *et al.*, 1987). So, the SOAT attains the killing of pathogen circulating in the blood and presents again the inactivated pathogen to the patient's immune system, acting as an autovaccine. At the same time the dissolution of the oxygen-ozone mixture in the withdrawn blood and the intramuscular reinjection of the ozone-treated blood with the gas attain a boost of phagocyte's burst and a more effective presentation of inactivated antigen to lymphocyte's compartment (Larini and Bocci, 2005); the result is the administration of an inactivated autovaccine, attaining a strengthening of immune response against the pathogen invading the patient (Bocci and Paulesu, 1990). The behavior of symptom VAS and UAS7 in both patients shows the SOAT's efficacy; the urticaria-angioedema symptoms stayed permanently silent after stopping of the oxygen-ozone treatment. This experience, worthy of further studies including a wider patient's cohort, shows the real efficacy of oxygen-ozone treatment against viral-induced urticaria, attaining as well a falling down of viral load. This study really shows that the Small Ozonized Autohemotherapy may be an effective treatment of viral-related urticaria.

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