

Medicine is Flourishing at the Dead Sea

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In 1936 a young Israeli scholar, Binyamin Elazar-Vocani, published an article in the prestigious journal *Nature*, in which he described the life in the Dead Sea. He entitled his paper "Life in the Dead Sea" [1]. In 1940 he presented his studies on the life in the Dead Sea at the Hebrew University in Jerusalem, and in the same year his doctorate dissertation. This is an important work on the inappropriate name of this unique lake. For 2200 years, the theory of the great Greek philosopher Aristotle that there is no life in the Dead Sea was accepted by the scientific world. In his paper, Elazari-Vulcani proved the existence of living creatures in both the salty water and the mud. Life is present not only in the deep water of the Dead Sea, but also on its surface and its shores.

In this issue of *IMAJ*, Moses and colleagues [2] review the unique therapeutic properties of climatotherapy at the Dead Sea for several cutaneous and non-cutaneous diseases. The majority of patients visiting the Dead Sea for medical purposes are psoriatics, atopic dermatitis patients, patients with vitiligo, and arthritis sufferers. Recently, two new indications for climatotherapy presented at the Dead Sea: cystic fibrosis and mycosis fungoides. All the other cutaneous indications mentioned in the review are rarely present at the Dead Sea and the benefit of Dead Sea treatment for these indications is not yet proven.

The efficacy of climatotherapy at the Dead Sea for psoriasis and psoriatic arthritis has been widely investigated [3,4]. Several studies were also published on indications and contraindications, safety and side effects, and length of remission [5,6]. It is recognized that climatotherapy at the Dead Sea for psoriasis and psoriatic arthritis is an effective and safe treatment. For the patients, this treatment is superior to other modalities because it is pleasant, it is provided in a holiday environment and bears a pronounced psychological advantage.

The second common indication for Dead Sea treatment is atopic dermatitis. In this dermatitis, because of the nature of the disease, climatotherapy (namely exposure to sun and to water) is given with caution and requires time until the patient recovers completely [7]. A few studies on Dead Sea treatment for atopic dermatitis have been undertaken [8,9] but definitely not enough. Phototherapy for atopic dermatitis is a well-established treatment modality with well-known protocols [10,11]. My personal impression from following patients who I referred to the Dead Sea clinic is that natural heliotherapy at the Dead Sea is

very helpful. Nonetheless, there is still a need for well-designed studies on the role of sun and water at the Dead Sea for atopic dermatitis.

Regarding vitiligo, the third common indication presenting at the Dead Sea, several studies have been published [2,12]. We recently completed a retrospective study on the efficacy of climatotherapy at the Dead Sea in 505 vitiligo patients. Between 10 and 30% of the body surface was affected in more than 50% of the patients, and more than 30% in 36% of the patients. About 40% of the patients stayed at the Dead Sea for 4 weeks, and 35% of them prolonged their stay up to 8 weeks. At the end of the treatment 17 patients (3.3%) showed a total or almost total repigmentation while 70.4% of them showed more than 50% repigmentation. In the absence of an effective treatment for vitiligo, these results are very promising.

Hodak and colleagues [2] published a pioneer study on the success of climatotherapy at the Dead Sea in mycosis fungoides, and confirmed previous observations reported by Brenner and team [13]. Further investigation is needed to establish the optimal protocol regimen of this promising treatment modality for patch-stage mycosis fungoides.

Sukenik has published numerous studies on the effectiveness of Dead Sea climatotherapy for arthritis. He provided a large body of evidence of efficacy and safety, and clearly established its benefits [14] following the first observations of Machtey. Recent publications have emphasized the potency of Dead Sea climatotherapy in non-articular rheumatism, like fibromyalgia [2], and others reported good results in chronic pain syndromes and post-polio syndrome.

Regarding cystic fibrosis, two publications have shed more light on the power of climatotherapy at the Dead Sea. In this journal in 2004 an article demonstrated lack of evidence of transmission of *Pseudomonas aeruginosa* among patients attending a winter health camp [2]. Recently, Falk and colleagues from the Wingate Institute [15] concluded that even a brief stay at the Dead Sea area might have physiologic benefits for cystic fibrosis patients with moderate to severe lung disease. Following these results, the relatively small number of patients coming to the Dead Sea for lung rehabilitation should increase in the next few years, and not only for this specific indication.

Uveitis is also an indication for climatotherapy at the Dead Sea, and possibly the most exciting. Over the years a few patients

suffering from this devastating disease have been treated at the Dead Sea, with impressive good results. Publications in German describe the positive effects of the stay, and last year Yagev and colleagues, again in this journal [2], reported evidence of short and possibly long-term improvement in the signs and symptoms of uveitis following exposure to the Dead Sea environment. This confirmation of the positive immunosuppressive effect of the Dead Sea stay should encourage immunologists to plan further studies.

In the last few years, less attention has been paid to the effects of Dead Sea climatotherapy on hypertension. However, this question has been studied many times, and evidence of lower blood pressure measurements at the Dead Sea has been reported for the last 10 years [16].

The Dead Sea is one of the natural treasures of Israel and possesses enormous potential for medical tourism. The solid evidence of the value of Dead Sea climatotherapy is there and continually expanding, and we urge the government to invest more in supporting research on existing and new indications. Without any doubt, the Dead Sea is very much alive.

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