Balneotherapy and diabetes

Accepted 30th July, 2018

ABSTRACT

Diabetes is not only a problem for people, but also for animals such as cat and dogs. As a matter of fact, as a result of the examination of blood samples taken from animals with the advancing technological devices, it has been pointed out that the presence of diabetes also increases in animals. Circulation problems in animals, cardiovascular problems, fatigue and low yields are frequent complaints of diabetes. Balneotherapeutic practices are known to be good for diabetes. Balneotherapy is the practice of immersing a subject in mineral water or mineral-laden mud; it is part of the traditional medicine of many cultures and originated in hot springs, cold water springs, or other sources of such water, such as the Dead Sea. The purpose of this review is to present information in the context of available literatures.

Key words: Diabetes, balneotherapy, human, animals.

INTRODUCTION

Balneotherapy is the presumed benefit from disease by bathing, a traditional medicine technique usually practiced at spas. While it is considered distinct from hydrotherapy, there are some overlaps in practice and in underlying principles. Balneotherapy may involve hot or cold water, massage through moving water, relaxation, or stimulation. Many mineral waters at spas are rich in particular minerals such as silica, sulfur, selenium, and radium. Medicinal clays are also widely used, a practice known as fangotherapy (Stevenson, 2007; https://en.wikipedia.org/wiki/Balneotherapy).

This therapy method is common and widely used to treat classical diseases. Due to chemical, thermal and mechanical effects, diseases such as dermatological and musculoskeletal diseases including atopic dermatitis, psoriasis, rheumatoid arthritis, ankylosing spondylitis, osteoarthritis and back pain are successfully treated by balneotherapy. Scientific studies have reported successful results, although in a small number, in the treatment of metabolic diseases such as diabetes, as well as illnesses (WHO Diabetes, 2017; Nasermoaddeli and Kagamimori, 2005). As a matter of fact, the prevalence of global diabetes is 8.5%, that is, 422 million worldwide, 59.8 million alone in Europe and corresponding to 9.1% of this population (WHO Diabetes, 2017). Balneoterpy is an alternative preventive treatment method, with increasing importance. It is a known fact in Turkey that this rate and rate of increase are much higher (Nasermoaddeli and Kagamimori, 2005; Ohtsuka et al., 1996).

In a balneotherapeutic study in the form of the use of hot spring waters; in 12 type II (non-insulin dependent) diabetic patients, the effects of thermal water cures on platelet glutathione metabolism were investigated and it was reported that balneoterapine had beneficial effects on the recovery of diabetes, as well as significant positive effects on antioxidant activity and immune parameters (Ohtsuka et al., 1996; Mandel et al., 2012).

As it is known, the blood acidity which is formed in the blood affects glucose metabolism by causing insulin resistance to develop (Simental-Mendia et al., 2016; Williams et al., 2016; Souto et al., 2011). Minerals, such as bicarbonate and magnesium, present in spring waters, provide important contributions for the improvement of diabetes mellitus by regulating the level of blood acids and pancreatic metabolism. In addition, hot spring waters taken in the form of drink provide significant benefits in...
improving the hyperglycemia tabulation due to high glycemic index (Naumann et al., 2017; Efimenko et al., 2015).

It has been reported that drinking mineral waters by diabetic patients suffering from non-alcoholic fatty liver disease stabilizes the liver, carbohydrate and lipid metabolism, preventing significant progress of pathological process and making important contributions to healing (Efimenko et al., 2015).

It has also been reported that treatment of common heart disorders using balneotherapy methods also improves important electrical activity in cardiac diseases, as well as improvement of diabetes (Fialova and Kittnar, 2015).

Unfortunately, we did not find a direct study of the therapeutic effects of balneoterapine on diabetes in animal species in our literature review. The fact that this treatment, which is widely used in human medicine, will be a reference for use in the field of veterinary medicine and the fact that it is the first in the said field, as a matter of fact, Turkey and unspecified hot spring waters are among the most important resources of the world in terms of mineral compositions and reserves (Elitok, 2011).

Turkey is a country rich in thermal sources as a result of geological and geomorphological features. It has more than 3,500 thermal springs whose temperatures are generally more than 21°C and our spa resources are in first place in Europe and among the top five in the world with reserve and high and balanced mineral levels (3). Unfortunately, sufficient scientific research on the use of these waters for human and animal health is yet to be conducted.

It can be said that the mineral compositions of hot spring water will play an important role in the treatment of diabetes. Absolutely, these waters are already being used in diabetics with empirical methods and very successful results are being obtained. There is no difference between human and animal metabolism in terms of the mechanism of formation of diabetes and its treatment. There is a strong need for further scientific research to explore and justify the healing effects of these waters on diabetes.

REFERENCES

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