

**Comparative study between Climatotherapy
and Cry-therapy regimens In management of
Children with Molluscum Contagiosum**

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Abstract:

Molluscum contagiosum is viral infection caused by a DNA poxvirus. It occurs frequently in children. It is characterized by small, painless blisters or papules that often spread through direct skin-to-skin contact, through shared items and often by papules scratching, picking, or breaking to other areas of the body. Lesions usually disappear within 6 to 12 months, and after 2 to 3 weeks with treatment by number of pharmaceutical and other surgical treatments, which showed high recurrence rates. Although Climatotherapy is not accepted as well-established management modalities in dermatology, but it used throughout the world. The therapeutic properties of the Red Sea area may be attributed to unique climatic characteristics and unique natural resources. This research aimed to compare the effects of Climatotherapy at the Red Sea area on Molluscum contagiosum, and surgical cry-therapy at Saudi German Hospital. Since systemic medications are avoided for all patients, the advantage of Red Sea Climatotherapy was concluded as a natural, pleasant, without the serious side effects therapy.

Conclusions:

Results of the current study encourage the use of climatotherapy for skin infection at the Red Sea in Jeddah, and open the way for the institutions to develop a therapeutic use of environmental therapy. healing of 93% of the patients and, suggest that some correlation does exist between the natural factors and the clinical response to this method of treatment. The improvement of skin infection significantly with no recurrence after 5 days up to two weeks from climatotherapy program is a short period compared with time needed for therapeutic medication or surgery Besides, there isn't any contraindication recorded for patients with diseases as chronic hypertension, diabetes, atherosclerosis. Besides have no side effects or hazards as therapeutic medication or surgery. Adding to the indirect psychological effects of climatotherapy.

Introduction:

Environmental therapy, although not accepted as well-established treatment modalities in dermatology, but is used throughout the world to less extend in Arab countries⁽¹⁻³⁾. The therapeutic properties of the Red Sea (RS) area for skin and rheumatic diseases have been known since ancient times⁽⁴⁻¹⁰⁾. These therapeutic properties may be attributed to unique climatic characteristics and natural resources⁽⁴⁻⁶⁾, including meteorological variables, attenuation of UV⁽¹¹⁻¹²⁾, RS water is (with its unparalleled salinity and unique composition), a source of natural thermo-mineral waters, mineral mud and increased bromine content of the air. The possible role of psychological influences in the RS area cannot be forgotten. This study will involve various therapy regimens for Molluscum contagiosum virus skin infection; climatotherapy of Red Sea water (bathing and sunlight exposure), and cry-therapy

Various environmental therapy modalities are used at the RS area^(10,13,14). These may be classified as heliotherapy (sun exposure), thalassotherapy (bathing in RS water), and climatotherapy (using atmosphere, temperature, humidity, barometric pressure, and light)⁽¹³⁾. In many studies climatotherapy at the RS area is referred to as a therapy consisting of sun exposure (heliotherapy) and bathing in RS water (thalassotherapy). It is characterized from others because of the climate, the high water salinity with high density, in addition to UV radiation, which helps in the treatment.. Adding to the composition of the air complex helping people with neuro-dermatitis and chronic respiratory problems. It is considered by some as medical tourism. modern scientific research proved the importance of bathing in sea water to get rid of stress, depression, insomnia, nervous tension overload, especially the sound waves caused by

different natural creatures which lives in seas, and water currents as a wonderful symphony concert, as nature has psychological effective therapeutic impact. Also bathing in sea shows many other effects on the body due to water pressure that varies according to depth, as depth causes positive effects to stimulate blood circulation and reduce muscle stiffness and spasm. This response due to the availability of the three factors of pressure, temperature and the salts in sea water⁽¹⁵⁾. Various studies^(4, 14, 16-30) have indicated that different RS environmental therapy modalities are effective in the treatment of skin diseases as psoriasis, skin infections (Viral, Fungal and Bacterial) and dermatitis. Most types of, skin infections and dermatitis responded to treatment⁽¹⁰⁾. Skin infections and dermatitis were successfully treated as combined therapy (climatotherapy) in the RS area⁽³⁰⁾. Until recently, most of these studies have consisted of clinical observations and descriptive rather than well-controlled studies.

Molluscum contagiosum is viral infection caused by a DNA poxvirus called (MCV). It occurs frequently in children which produces small, painless blisters or papules that often spread through direct skin-to-skin contact occurred through shared items (e.g., towels, pools, gym equipment). It spread often by papules scratching, picking, or breaking to other areas of the body. Papules normally disappear within 6 to 12 months, and after 2 to 3 weeks with treatment by number of pharmaceutical and other surgical treatments, which showed high recurrence rates⁽³¹⁾.

The antimicrobial effects probably incorporate mechanical, thermal, and chemical effects^(1,8,9). Chemical effects of the RS environmental therapy were evidenced by in vivo and in vitro studies^(16, 38-42), which disclosed increased levels of minerals that may play a role in cell proliferation and

differentiation⁽⁴³⁻⁴⁵⁾. Anti-inflammatory and immune-modulatory effects⁽⁸⁾ involving various cell lineages, inflammatory cytokine release, and cytokine receptor modulation⁽⁴⁶⁻⁵¹⁾ may be induced by the thermal effects of environmental therapy. Bathing in high concentrations of salt solutions may trigger the elution of various chemotactic and pro inflammatory mediators (i.e., elastase and cytokines) from the affected skin of patients acute skin infections, contact dermatitis, psoriasis, and atopic dermatitis⁽⁵²⁻⁵⁴⁾. Furthermore, bathing in tap water or salt solutions (including RS salts) has recently been associated with the increased photosensitivity of the skin to UV-B irradiation, and may contribute to the efficacy of balneophototherapy⁽⁵⁵⁻⁵⁶⁾. The pioneering studies elucidated the therapeutic effect of helio-balnotherapy for some dermal lesions in the RS area^(18,19). Others reported a beneficial effect in large groups of patients with skin infections treated at the RS area^(20,21). Sea water is endless source of benefits for human medicine; it contains many minerals and useful chemical agents, such as sodium chloride, potassium, magnesium, iodine, brome, gold, silver, plutonium and less uranium. It is known that a cubic meter of sea water contains 117 million tons of salt, one of the elements most important to human life, and the veterans sue salt its weight in gold because they know the characteristics of medical uniqueness of this magic ingredient, and in modern times, entered the salt in many pharmaceutical compounds, and are currently strengthening the salt quantities of the "iodine" in many countries of the world, and this helps to rid the human psychological symptoms such as depression, not to mention the other benefits of iodine for the human body^(15, 22-23)

Patients And Methods:

Twenty three male children patients aged (9- 15) years were diagnosed at the dermatological outpatient clinic of Saudi German Hospital (SGH) to

have Molluscum contagiosum viral (MCV) skin infection, In Jeddah, K.S.A. during July, 2009. All patients lived at Saudi German compound and used the same swimming pool (water analysis were asked and done during this study as a source of infection). Group (A) consisted of 15 patients exposed to complete One-day Climatotherapy at Red sea water (Palm Beach) of Jeddah in K.S.A. which aimed to present a natural, rapid, easy, costless and cheerful treatment. Heliotherapy is healthy sun-exposure (morning and afternoon) that was carried out over a period of time all through the day (total exposure 5-6 hours). Thalassotherapy is bathing in red sea water (total bathing per day was 5- 6 hours). Figures (1) and (2) showed Palm Beach where climatotherapy was applied only on patients of the Group (A) at Red Sea at Jeddah, K.S.A.

Group (B) consisted of 8 patients subjected to cry-therapy and followed up at dermatological outpatient clinic (SGH). Both regiments modalities were not combined with any conventional topical or Systemic medications.

Fig. 1, 2 Palm Beach of the Red Sea, Jeddah, KSA where climatotherapy applied only on group (A).



Climatotherapy as part of (environmental therapy) combining the natural elements and resources of a specific geographic location, has been used at Jeddah city at the Red Sea shore, which has characteristic natural climate all over the year and geographic features. As a result of this environment, the amount of ultraviolet rays reaching earth is much higher than in any other region, In addition to these geographic features, Red Sea Water analysis reported that:

- ✧ Physical analysis reported complete sterile water with free microbes
- ✧ Chemical analysis is characterized by its high salts content (Table 1).

Table 1. Analysis of Red Sea water in Jeddah

Parameters	Value
pH	8.4
Turbidity NTU	0.3
Salinity	34
Alkalinity As CO ₃	16 Mg /1
Alkalinity As HCO ₃	104 Mg /1
Silica SIO ₂	0.91 Mg /1
Total Hardness As Caco ₃	7700 Mg /1
Ca Hardness As Caco ₃	1200 Mg /1
Mg Hardness As Mg Co ₃	6500 Mg /1
Chloride	22200 Mg /1
Sulfate	3300 Mg /1
Iron	0.6 Mg /1
Mn	Nil Mg /1

Table 1 showed that the most important contents of the Red Sea off the coast of Jeddah is magnesium, one of the most important minerals that cause direct effect on microbes, in addition to the direct influence on skin. Sulfur, calcium, silicon, iron and manganese are salts and minerals from the most important sources of food for marine organisms, which may be one reason for the healing power of the harmful micro-organisms. Research has shown that the salinity in the sea differ from place to place, depending on the application of the therapy program minerals and salts concentration⁽³⁵⁾.

Results and Discussion:

Results of climatotherapy regimen in all were dramatic. In the vast majority of cases, the skin lesion disappeared or were greatly alleviated. The percentage improvements were estimated relatively to the original extent of the disease, then classified into groups and defined as: Minimal improvement 20- 50%, Considerable improvement 50- 80%, Excellent improvement 80- 95%, Complete clearing up 95- 100%

Patients in both samples were followed up after 2 days, 5 days, 1 week and 2 two weeks after the termination of the climatotherapy course (Table 2).

Table 2. Follow up results of the climato-group with Red Sea climatotherapy at Jeddah over the two weeks according to the degree of improvement of skin infection.

Degree Of Improvement	No.	Follow Up						Total heeled after 2 Weeks	
		2- 5 Days After		1 Week after		2 Week After		No.	%
			%		%		%		
Complete Clearing Up 95-100%	15			11	73%	12	80%	14	93%
Excellent Improvement 80-95%		6	40%						
Considerable Improvement 50-80%						1	6%		
Minimal improvement 20-50%						1	6%		

Patients with viral infection Molluscum contagiosum; 6 patients (40%) showed excellent improvement 80- 95% after 5 days, 11 patients out of 15 (73.33%) showed complete clearing up 95- 100%

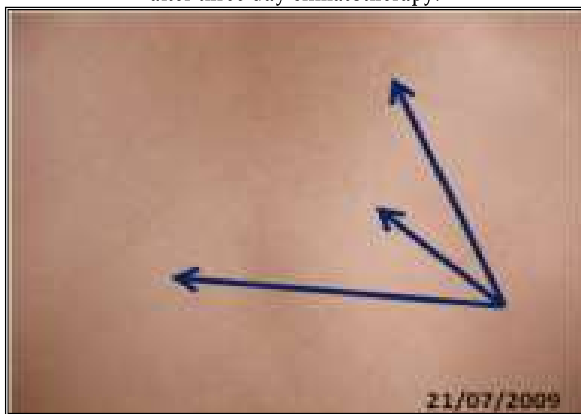
after one week and no recurrence by the end of 2 weeks, on the other hand one patient 6% showed considerable improvement 50- 80% and one patient 6% showed minimal improvement 20- 50% by the

end of 2 weeks, that could be referred to their low immunity.

Fig. 1, 2 Molluscum contagiosum viral infection of the skin on the back and abdomen before climatotherapy began



Fig. 3, 4 Complete clearing up of Molluscum contagiosum after three-day climatotherapy.



When comparing Figs. 1, 2 with Figs. 3, 4 we noticed healing effects of Molluscum contagiosum, on the back and chest areas, after 2- 5 days of climatotherapy on children of the climato-group that showed complete clearing up when results were compared with patients of the cryo-group who had cryo-therapy where the infection showed pigmentation at the site of cryo-therapy. this indicates the effectiveness of the climatotherapy regime with more time exposure to sea water and sun as concentrated doses and not interrupted when compared with cryo-group.

When 15 patients of climato-group compared to cryo-group 8 patients with Molluscum contagiosum treated with cauterization in 2 separate sessions showed complete clearing up by the end of 2 weeks, which start recurrence after 1 week. Table 3. We can summarize results in table (5)

Table 3. Follow up results of the cry-group with Red Sea cry-therapy at Jeddah over the two weeks according to the degree of improvement of skin infection.

Degree Of Improvement	No.	Follow Up					Total Heeled After 2 Weeks	
		sessions	5 Days After	Recurrence 1 Week after	sessions	2 Week After	No.	%
Complete Clearing Up 95-100%	8	Cry- Therapy					7	93%
Excellent Improvement 80-95%			6	5	5	7		
Considerable Improvement 50-80%			2	2	2			
Minimal improvement 20-50%								

Table (5) comparison between the results of both groups.

Group	Group (A)	Group (B)
Therapy	Climatotherapy	Cryo-Therapy
No. Patients	15	8
Duration Of Therapy	Total One Day	One Session
Clinical exam after two day therapy	Lesion Disappear With Little Pigmentation	Scar at the site of cry-therapy
Clinical exam after one week therapy	Complete Lesion Disappear	Lesions Recurrence

Some researchers reported that showers in sea water beach, exposing the body to the healthy sun in the (morning and before noon), makes a person vulnerable to rays with electromagnetic waves. which stimulates biological processes in the body, as a result of the interaction between heat radiation and chemical elements contributes to increasing the immunity of the body slowly, and emphasize what is known about the benefits of modern medicine and medical Sea⁽⁵⁵⁻⁵⁶⁾.

These results come with other study on 22 patients climato-group after 2 weeks in percentage% In a study published⁽⁵⁸⁾ at the European Conference on prevention and management of some skin diseases with drugs, creams and ointments treatment along with physical therapy with ultraviolet light and bathing in the sea water was used in 80 patients with viral diseases controversial incurable, and has made the study 90% full cure or excellent improvement. Compared with other therapeutic regimens used in the treatment of medical chemical only.

Two clinical observations^(14,59) provided evidence for the therapeutic potential of RS environmental therapy for atopic dermatitis. Complete clearance of lesions was recorded in 90% of 1408 patients after 4 to 6 weeks' stay at the RS area (in 97% of the patients lesions cleared after 6 weeks and in 89% after 4 weeks). A reduction in itching was recorded during the first week of stay at the RS area. The percentage of patients who improved during the spring and summer was higher than in the autumn and winter⁽¹⁴⁾.

Girytes et al.⁽⁵⁹⁾ reported the efficacy of RS climatotherapy for atopic dermatitis in 56 patients- 18 children younger than 18 years and 38 adults. The climatotherapy regimen consisted of daily sun exposure (maximum, 3- 4 hours), bathing in diluted RS water or sweet water (20 minutes twice a day), and free application of emollients. Clinical evaluation was based on the index for Severity Scoring of Atopic Dermatitis. At the end of climatotherapy, both groups showed a significant clearing of skin lesions, reductions in itch and sleep disturbances, and a significant decrease ($p < 0.001$) in the severity scoring of atopic dermatitis index.

Clinical observation of 102 patients with vitiligo with viral skin lesions treated by the RS climatotherapy⁽⁶⁰⁾ revealed beneficial results manifested by total or almost total re-pigmentation and cure in 11% of the patients, significant re-pigmentation in 82.3%, partial re-pigmentation in 6.4%, and no change in 1% of the patients. Marked improvement was observed in 78% and 70% of the patients who stayed 4 to 6 weeks and 4 weeks, respectively, in the RS area.

Clinical observation of 86 patients treated for acne vulgaris with bacterial infection in the RS area⁽¹⁴⁾ showed a significant improvement manifested by a reduced number of comedones and pustules. Favorable effects of RS environmental therapy were reported also for dyshidrotic eczema, lichen planus, ichthyosis, parapsoriasis, mycosis fungoides Stage I, pityriasis rubra pilaris, urticaria pigmentosa (adult type), necrobiosis lipoidica,

circumscribed scleroderma, alopecia areata, lichen sclerosus and atrophicus and granuloma annulare⁽¹⁴⁾.

It is well known that water salts are essential in the treatment of skin infection and dermatitis combined with the effect of long wave ultraviolet rays which are prevailing in the early morning and late afternoon. These factors are available all over the year in Red Sea shores of Jeddah city, and form the basis for management of skin infections and diseases by climatotherapy. This concept is in accordance with that described by⁽⁶²⁾ who mentioned that the high salt seawater bathing and sunlight exposure form an effective therapy for clearing up many skin diseases and specially psoriasis.

Conclusions:

Results of the current study encourage the use of climatotherapy for skin infection at the Red Sea in Jeddah, and open the way for the institutions to develop a therapeutic use of environmental therapy. healing of 93% of the patients and, suggest that some correlation does exist between the natural factors and the clinical response to this method of treatment.

The improvement of skin infection significantly with no recurrence after 5 days up to two weeks from climatotherapy program is a short period compared with time needed for therapeutic medication or surgery Besides, there isn't any contraindication recorded for patients with diseases as chronic hypertension, diabetes, atherosclerosis. Besides have no side effects or hazards as therapeutic medication or surgery. Adding to the indirect psychological effects of climatotherapy.

This study was essential to establish therapeutic guidelines to determine the optimal treatment modality for each skin disease and the optimal protocol of treatment.

Recommendation:

1. Open medical resorts all though the red sea to use climatotherapy.
2. Climatotherapy is a natural treatment needs more researches studies.
3. More mass media to concentrate on the type on treatments.

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المخلص

**دراسة مقارنة بين العلاج المناخي والعلاج بالتبريد
في علاج الأطفال الذين يعانون من المليساء المعدية**

على الرغم من عدم اعتماد العلاج البيئي (المناخي) للأمراض الجلدية، إلا أنها تستخدم في جميع أنحاء العالم، وتعزى الخصائص العلاجية للأمراض الجلد والروماتيزم في منطقة البحر الأحمر لخصائص فريدة من نوعها يميزها فيها المناخ والموارد الطبيعية الفريدة. والآليات التي يتم من خلالها خفض حدة الأمراض والالتهابات الجلدية تتطوّر على العلاج البيئي الميكانيكي والحرارى والكيميائي والأشعاعي. ويستخدم في الدراسة الحالية العلاج بالأشعة فوق البنفسجية مع استخدام مياه البحر الأحمر في علاج بعض الالتهابات الجلدية الفيروسية "المليساء المعدية" واعتبارها طريقة طبيعية كمضاد للميكروبات الممرضة، ففي ٢٢ من المرضى الذين يعانون من المليساء المعدية، حقق ٩٣% من العينة ١٥ من أطفال المجموعة تحسنا كاملا ملحوظا وممتازا بالعلاج المناخي Climatotherapy في مدينة جدة، مقارنة مع جلستى للكلى الثلجى لعدد ٨ اطفال فى علاج الالتهابات الجلدية المماثلة.

ولهذا يوصى البحث باستخدام العلاج المناخي في مياه البحر الاحمر كاحد الطرق الطبيعية والأمنة في علاج الالتهابات الجلدية الفيروسية المليساء المعدية ودون آثار جانبية، واعتماد معاهد علاجية على شواطئ البحر الاحمر.

**The Impact of Comorbidity of Nocturnal Enuresis
with Attention Deficit Hyperactivity Disorder on Self Esteem**

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Introduction:

Attention Deficit Hyperactivity Disorder (ADHD) is a chronic pervasive childhood disorder characterized by developmentally inappropriate activity level, low frustration tolerance, impulsivity, poor organization of behavior, distractibility, and inability to sustain attention and concentration. It is one of the most common childhood disorders, occurring in 3% to 7% of school age children and representing one third to one half of referrals to child mental health services. The core symptoms of ADHD are associated with impairments in several domains of functioning, including academic achievement at school, interactions with parents and siblings, and peer relationships. Children diagnosed with ADHD also have a higher likelihood of coexisting psychiatric disorders and usually continue to have problems attributable to ADHD as adults that require treatment.

The core symptoms of ADHD, the associated functional deficits and comorbid disorders, and the risk for ongoing problems as adults underscore the seriousness of ADHD as a childhood condition and the importance of appropriate diagnosis and effective treatments. Public interest in the disorder has increased, including debate in the public media concerning the diagnostic process and treatment choices.

Researches regarding the social and psychosocial factors associated with ADHD and

how these factors may affect the self-worth or self-perception of children with this disorder have yielded conflicting results. It is known, however, that children with ADHD often receive negative attention because of their behavior. Research has shown that these children exhibit difficulties in social situations. The cumulative effect of years of negativity and social rejection can lead to low self-esteem and a negative self-perception.

Nocturnal enuresis, according to DSM-IV, is defined as an involuntary (or voluntary) voiding of urine into the bed, with a severity of at least twice a week, in children over 5 years of age, when not provoked by congenital or acquired defects of the central nervous system (CNS) or by the direct physiological effect of a substance (such as a diuretic).

Nocturnal enuresis has been described as the most prevalent and chronic of all childhood problems. The experience, particularly for the older child, can be extremely distressing and limiting. It is now thought that psychological distress (emotional, behavioural, and self-esteem) arises as a consequence of bedwetting.

Lack of medical attention to enuresis may also be a cause for concern because the persistence of enuresis past the age of 7 years is frequently associated with low self-esteem in children. In addition to reducing enuresis symptoms, successful treatment of enuresis is also associated with