

*Paediatric crenobalneotherapy in France***Balneoterapia em pediatria na França**

In France, 12 conditions come under spa therapy, with National Health Service (NHS) undertaking to reimburse costs for a period of three weeks. Paediatric crenobalneotherapy addresses mainly three conditions: respiratory tract, dermatology and children development disorders. Chronic disorders for the respiratory tract are asthma and these of the ORL domain, whether they originate from infection and/or from allergy. In the case of dermatology, they are atopic dermatitis, psoriasis and the after-effects of burns. Children development disorders relate mainly to enuresis therapy. Spa therapy practices are similar to those used for adults, but a paediatric water cure requires special reception conditions and specific facilities, i.e. a paediatric department in thermal baths and accommodation procedures with the choice of a stay in children homes which are private medical institutions registered with the NHS.

The specialization of the French spa stations is one of the great characteristics of French crenobalneotherapy; this specialization is founded on the composition of water, the spa techniques, the characteristics of the additional factors such as the climate, the structures of lodging, the actions of education for health¹.

Paediatric crenobalneotherapy² represents for the child an invaluable therapeutic complement in many affections, and this in spite of the progresses made in the knowledge and in the treatment of the diseases which strike him. Crenobalneotherapy for children and teenagers levels is prescribed today primarily in the treatment of chronic affections of the respiratory tract, in dermatology and in the enuretic child. Schematically, the respiratory infections are treated by sulphur waters of the Pyrenees and the Alps, and the respiratory allergies by sodic bicarbonated waters of Auvergne. However, association allergy and infection are frequent and the choice of the spa station will be

determined by the prescriber according to the dominant one of the affection and its clinical expression. Waters with special mineralization as arsenic, selenium, silica and sulphur are used in dermatology, chlorinated sodic waters in the treatment of the enuresis.

It is a natural therapy, without iatrogenic effects, which applies to certain chronic or recurring diseases; it does not exclude association with a treatment by drug but it aims at decreasing, even removing its use, thus contributing to improve the quality of life: it is in this way that crenobalneotherapy is an actual therapy.

The success of a cure depends on two factors:

- Water springs must be adapted to the concerned pathology;
- A total, somatic and psychological, assumption of responsibility for the child is taken by the medical staff in an environment propitious to health, including health education, functional rehabilitation and sports activities.

AFFECTIONS OF RESPIRATORY TRACT**Facts and levels of proof**

Investigations have been made to try and appreciate the effectiveness of mineral water and spa techniques in ORL indications for the child.

Clinical scores, complementary examinations (impedancimetry, diaphanoscopy), one to three years medical follow-ups were retained as criteria of evaluation. The results observed seem to confirm the usefulness of sulphur waters when the infectious factor is in the foreground and the more specific action of arsenical bicarbonated water in the case of allergies⁴.

Evaluation of the effectiveness of spa therapy treatment on the auditory threshold in 160 children aged 5 to 10 suffering from repeated seromucous

otitis; such is the study selected by the French Association for Research on Spa Therapy. It consists of a prospective clinical study, randomized, with parallel groups: immediate spa therapy versus waiting list control group. The criteria of inclusion are as follows: having consulted at least three times for seromucous otitis, uni- or bilateral, during the year preceding inclusion, having never done any spa therapy. But the recruitment was not correct and the study could not take place.

In child asthma, the clinical effectiveness of a cure at a water spa is evaluated according to the number of crises in the year following the cure, the evolution of functional parameters such as respiratory functional exploration, consumption of inhaled corticoids and school absenteeism. But these studies don't comprise control groups, nor analyses of those who have lost contact, and therefore can be criticized. A study led by the Medical Control National Service confirmed the benefit obtained in children with results judged good and very good in 70%.

Indications

Rhinitis and rhino-sinusitis with nasal obstruction and sniffing, repeated rhinopharyngitis at the origin of complications at sinus, ears and bronchi level, diffuse chronic pharyngitis, repeated acute otitis are indications for sulphur water springs.

Allergic rhinitis, rhino-conjunctivitis and rhino-sinusitis, the allergic etiology of which is suspected or confirmed, are excellent indications for bicarbonated waters if the ousting of the allergens in question or the specific desensitizing did not produce the anticipated results.

Asthma is one of the major indications for spa therapy in the child. First chronic child disease, it affects more than 10% of school children. The precocity of its appearance, and its severity, have much increased with the socio-economic consequences that it implies: delaying school progress, hospitalizations, repercussion on the quality of life. In the therapeutic diagram of mild asthma and moderate persistent asthma, the crenobalneotherapy integrates itself perfectly in complement of a basic treatment or of desensitizing.

Recurring bronchitis are good indications for sulfur water springs⁵.

Thermal Practices

Local crenotherapy care requires the cooperation of the child. The nasal bath with the pipette can be carried out from the time a child is three year old. Nasal irrigation can be done correctly from age 6 onwards. The aerosols, inhaler, vaporarium are prescribed for the bronchial affections.

Tubal insufflation, pharyngeal shower, sinus washing (Proëtz) come under the responsibility of the thermal physician.

DERMATOLOGY

Facts and levels of proof

Datas are mainly the study of cohorts with atopic dermatitis and psoriasis. So, the efficacy evaluation is based on the SCORAD (scoring of atopic dermatitis) determination at the third treatment week with a nearly 50 % decrease as compared to the pre-treatment value (Day 0 : 29,24 and Day 21 : 15,23). For psoriasis, it is the PASI (psoriasis area and severity index) which is used with an improvement at week 3 of 61%.

Indications

Atopic dermatitis is the main indication for spa therapy. It must be treated at the earliest possible, and a child as young as five months old can benefit from it (with his mother)⁶.

Child psoriasis represents an excellent indication because of the favourable effects obtained and of good tolerance of the spa treatment, the more so since retinoids and puvotherapy are prohibited to him. Successive cures show that the date of recurrences is moved back, the eruptions often less intense and more spaced out with possibility of whitening for several years.

The after-effects of burns have become an indication for crenobalneotherapy. 21 days, once or twice a year, according to the urgency and the importance of the lesions, will help and accelerate anatomical recovery, will decrease prurit and dysesthesies. The improvement thus obtained allows a better mobilization. While

on this subject, there is in France a consensus regarding the care of and the responsibility for seriously burnt people. The national health insurance system reimbursed at 100% two spa treatments a year during the two first years and one a year after⁷.

Thermal practices

Apart from general crenobalneotherapy, spring water spraying, the filiform shower is the mainly care practiced by the thermal physician and it is proportioned to the importance of the lesions and the cutaneous tolerance.

ENURESIS

Facts and Levels of proof

Sodic chlorinated spas are the ones concerned with this indication. The study of a cohort of 144 enuretics aged 6 to 17 who had taken a cure in 2002 showed that the recovery ratio in one year was 34% and definitely higher than the yearly rate of spontaneous recovery of 15%. But many patients have been lost contact³.

Indications

Six forms are described: three nocturnal isolated forms and three forms associated with diurnal disorders. Only the first three are relevant to spa therapy, result of the experience of the physicians in the spa stations.

Thermal Practices

The essential of the therapy rests on a twice-daily drink cure, the other administered care being collective baths, jet showers, mobilization swimming pool, collective inhalations in spray rooms with gymnastics under the direction of physiotherapists.

In France, about twenty thermal spas, benefiting from a favourable climatic environment going from a mild sedative climate to a tonic and vivifying mountain climate, have specific paediatric indications.

THE STAY OF CHILDREN IN THERMAL SPAS

In France, about fifteen thermal spas, profiting from a climatic environment favourable going from a soft and sedative climate to a climate of mountain tonic and

vivifying, have specific paediatric indications. Three weeks stay devoted to health, a cure at a spa will offer conditions privileged for a total treatment. The spa establishments are structured in services individualized for the children with a personnel trained with their reception and they have adapted equipment.

Two possibilities are offered for the children :

– Either with their family : parents accompany the children and will ensure the monitoring of the stay ; for the children of less than 3 years, the active presence of the parents is essential and is not discussed.

– Or in children's houses where they live in community, without the parents, during 21 days consecutive. These children's houses (from 3 to 17 years) are private establishments subjected to accreditation by the High Authority of Health and reimbursed by the National Health Insurance Systems and the mutual insurance companies. Each house has a responsible physician, nurses and an educational framing. It is like a hospitalization².

During the 3 weeks, the child not only makes the training of the life in group, but takes advantage of a continuous medical follow-up, of a medical and therapeutic education: he better knows its disease, its drugs and the necessity of taking its treatment. He wins autonomy.

School of Asthma, School of the Skin, workshops, round tables animated by professionals of health, take part in the educational project.

The physical reconditioning forms also part integral of the stay because these children underestimate often their capacities. They do sport under medical control, adapted and chosen freely.

CONCLUSION

It is necessary to regard the crenobalneotherapy as a total medicine because, beside the curative treatment itself by mineral water, the thermal spa is a privileged place for information and medical education.

Monique Fourot-Bauzon

MD La Bourboule, Auvergne, France

Pascale Jeambrun

MD Lons-le-Saunier, Jura, France

REFERENCES

1. Queneau P et coll. Médecine thermale, faits et preuves. Paris: Masson, 2000.
2. CETTE (Centre d'Étude sur la Thérapeutique, le Thermalisme et l'Enfant). Mieux connaître les cures thermales chez l'enfant. Expansion Scientifique Française, 1991.
3. Jeambrun P, Lacroix M, Graber-Duvernay B. Énurésie: résultats à un an d'une cohorte de 144 énurétiques âgés de 6 à 17 ans ayant suivi une cure thermique en maison d'enfants à Lons-le-Saunier. *Therm Climat*. 2004; 141(1): 27-36.
4. Jean R, Fourot-Bauzon M, Perrin P. Cures Thermales en Pneumo-Allergologie et en ORL pédiatriques. *Ann Pédiatr*. 1992; 39(5):293-299.
5. Perrin P, Boulangé M, Jean R, Darrouzet JM. Crénothérapie: éditions techniques. In: *Encycl. Méd. Chir. Oto-Rhino-Laryngologie*, 20900 A¹⁰, Paris: 1991, p. 16.
6. Sonneck JM. La dermatite atopique de l'enfant en cure thermique. Réunion de la Société Française d'Hydrologie. Paris: *Therm Climat*, 1994, 131: 253-257.
7. Collectif. Perspectives du thermalisme dermatologique. *Les Nouvelles Dermatologiques*. Abr. 2005; 24(6):407-416.