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STATE OF THE ART IN ITALIAN RESEARCH IN SPA THERAPY AND IN BALNEOTHERAPY

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From several points of view, this represents a difficult subject to develop, an area where, probably, persists a little of confusion.
We have greatly appreciated the presentations that some colleagues submitted, with the experiences made in other countries. Moreover we have appreciated the meta-analysis on the published scientific researches in thermal medicine. All these presentations reinforced our opinion about the scientific research in balneology : it could be affirmed that it exists and in the last ten years, several important contributes have been given to the international scientific archives, from several countries [1-12].
Anyway some criticisms persist : the lack of communication between the researchers, the lack of coordination between different projects. Often to understand the present, it needs to know the past, and in this field the past is in particular rich. Consequently we would like share with you some historical aspects and applied models in thermal field, so to allow the development of a common critical analysis [13-15].
Ippocrate, Plinio, Galeno, Celso gave us the first informations and interpretations about mineral waters' clinical features and therapeutic activities [16]. But is the "experimental method" in XIX^{e} century that allows the modern scientific investigation and favours the development of relationships with the Universities. After the 2nd World War, thermal treatments become more popular and accessible to a large part of people [17,18]. But, on the contrary, from a scientific point of view, hydrology shows a lower level of organization and few scientific evidences accompany the growing popularity of the treatments.
In the meantime, several medical traditional branches demonstrate the intention to incorporate balneology : internal medicine, pharmacology, biochemistry, physiology, etc... In the last years all of us have observed important evolutions in the medical fields : clinicians, scientists and patients have developed the wish to understand and manage the actions of the different treatments and, if possible, to optimize them.
In the hydrologic world this kind of evolution provoked several contradictory behaviours.
We could assist to the appearance of a dichotomy between entrepreneurs and scientific institutions.
The entrepreneurs had the financial power but few interest in invest money to keep and build the scientific dignity of hydrology, also considering that the market was booming.

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On the other hand, the scientific institutions, such as University and Ministry, were producers of results but not able to induce an impetus, an impulse to the knowledge. Consequently medical hydrology became the target of terrible criticism coming from the medical scientific world while the commercial requirements caused an unclear collocation of balneology between health and tourism.
Anyway both have no interest for scientific research.
In ’90 thermalism lives a terrible crisis : the lack of a constant activity of scientific research, of therapeutic credibility together with economic difficulties, oblige the Italian Government to rationalize the costs for public health [19].

Thermal world hasn’t tools of evidenced based medicine (EBM) to affirm the efficacy of the treatments and a profitable cost/benefit rate. The entrepreneurs convince the Government to maintain thermal therapies within the National Health System, but subsequently : they had to show scientifically the efficacy of mineral thermal waters.
This is the moment in which born and growth the “Naïade Project” : a national, multicentric, observational study, involving 247 thermal Spa, coordinated by Federterme, which represents the Italian association of thermal entrepreneurs. This study had to give two mainly answers : are thermal treatments able to modify the health conditions of patients undergoing them ? Are thermal therapies able to reduce health costs ?
Between 01.01.1996 and 12.12.1997, were enrolled 39.943 subjects attending Spa, suffering from the following pathologies :

DISEASE	MINERAL WATERS
Rheumatic diseases	
osteoarthritis	sulphureus, saline-bromine-iodine, sulphates, bicarbonates
degenerative rheumatism	sulphureus, saline-bromine-iodine, sulphates, bicarbonates
Respiratory diseases	
chronic rhinitis	sulphureus, saline-bromine-iodine, sulphates, bicarbonates
chronic sinusitis	sulphureus, saline-bromine-iodine, sulphates,bicarbonates
chronic bronchitis	saline-bromine-iodine, sulphates, bicarbonates
Skin diseases	
psoriasis	sulphureus
Gynaecological diseases	
pelvic connectival sclerosis	saline-bromine-iodine
aspecific chronic vaginitis with persistent leucorrea	saline-bromine-iodine
Ear, nose and throat	
vascular rhinitis	Sulphureus, saline-bromine-iodine, sulphates, bicarbonates
chronic pharyngitis	Sulphureus, saline-bromine-iodine, sulphates, bicarbonates
chronic laryngitis	Sulphureus, saline-bromine-iodine, sulphates, bicarbonates
chronic ear inflammation	Sulphureus, saline-bromine-iodine, sulphates, bicarbonates

DISEASE	MINERAL WATERS
Urinary tract	
kidney stones and relapses	oligomineral
Vascular diseases	
chonic phlebopathies	saline-bromine-iodine, sulphates
Gastroenteric diseases	
dyspepsia	saline-bromine-iodine, sulphates, bicarbonates
irritable bowel syndrome	saline-bromine-iodine, sulphates, bicarbonates

The enrolled patients replayed a questionnaire consisting of 1400 items. 59.2 % of the patients came back after 12 months and the procedures was repeated. The study has been closed on 31.12.1997 and all the data have been invoiced to the statistical department of the University of Aquila to perform the statistical tests.
The obtained data showed that :

- thermal therapies exert good efficacy in a short/medium perspective,
- thermal therapies are useful for the secondary prevention,
- thermal therapies decrease the hospital admissions (related with the pathologies treatable with thermal waters).

Consequently thermal therapies kept their position within the national health system ! The table 1 shows the publications followed from the Naïade Project.

Tab. 1 - Publications followed from the Naïade Project

1.
Rossi A, Cartisano C, Carlesimo M.
Terme e cute
2003 Giornale Italiano di Dermatologia e Venereologia Vol 136(6):519-524

2.
Melillo G, Nappi G, Valenti M.
L'inaloterapia termale nel trattamento delle broncopneumopatie croniche. Risultati del progetto Naïade
2002 Rassegna di Patologia dell'Apparato Respiratorio Vol 17(1):37-42

3.
Fioravanti A, Valenti M, Di Orio F, Marcolongo R.
Clinical efficacy and cost-effectiveness evidence of SPA therapy in osteoarthritis. The results of the Naïade Italian project
2003 Panminerva Medica Vol 45(3):211-217

4.
Coiro V, Irali L, Danesino V.
The therapy of gynaecological diseases with salty mineral water : a branche of the Naïade project
2003 Italian Journal of Gynaecology and Obstetrics Vol 15(2)

5.
Coccheri S, Nappi G, Valenti M.
Changes in the use of health resources by patients with chronic phlebopathies after hydrotherapy
2002 International Angiology Vol 21(2):196-200
6.
De Luca S, Nappi G, Menconi Orsini A.
Progetto Naïade : patologia litiasica delle vie urinarie e terapia idropinica termale con acqua oligominerale
2001 Medicina Clinica e Termale 47:197-206
7.
Gasbarrini G, Candelli M, Graziosetto RG, Coccheri S, Di Orio F, Nappi G.
Evaluation of thermal water in patients with functional dyspepsia and irritable bowel syndrome accompanying constipation
2006 World J of Gastroenterology 14:2556-2562

What has changed in Italy after this complex investigation ? Surely the depth of awareness about the importance and the utility of scientific research in thermal medicine.
Federterme has created a Foundation for the permanent scientific research in thermal medicine, with the economic support of thermal spas (FoRST). Some isolated independent investigations are also evident, generally supported by specific Spas [20-22].

It the awareness about the importance of the scientific research has growth, shouldn't be underestimated the necessity to invest on the image and the role of thermal medicine in order to give it respectability in the global medical world. Reach this objective needs a shared engagement avoiding disorganized initiatives.
Priorities are :

- to promote scientific research,
- to overcome the conflicts between entrepreneurs, scientific societies, universities, public institutions, etc,
- to realize an international scientific journal representing the international reference in the field.

Actually thermal treatments are living a renewed condition of popularity but only a constant and in-depth activity of research, could gain it a lasting condition of modernity and respectability.
Concluding we would like to support the proposal to realize the first international multicentric study, that could be published in a scientific journal with impact factor and with the names of all the involved countries and researches.
It is evident that one of the main difficulties for the independent research is find financial support.
Consequently the start should be with a very simple study design allowing us to collect data : epidemiological observational study, questionnaire on quality of life, etc...

It is important establish the pathology to investigate, what kind of thermal treatment (bath ? mud ? drinking thermal water ?), the duration of the treatment, what kind of mineral water to use and, finally, share a common questionnaire.
Probably the main aim of this first attempt should be renew the public and scientific image of the hydrology and of the ISMH.
Probably, in a second phase, we could expand and deepen our investigations towards an international validation of the applied treatments.
At the moment, presumably, priority should a good methodology of research instead the peculiarity of a experimental parameter to investigate.
Anyway, some Italian Spas are at ISMH disposal, to collaborate in implementing every shared, common idea.

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