

## RETROSPECTIVE STUDY ON INCIDENCE OF PRESCRIBING PROCEDURES WITH THERMAL WATER IN REHABILITATION CLINICAL HOSPITAL BAILE FELIX

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### Abstract.

*The objective of this paper is the analysis of the incidence of the use of thermal water for the treatment of hospitalized patients in rehabilitation Clinical Hospital Baile Felix during January – December 2011. Have been taken in the study all patients hospitalized or treated in ambulatory conditions in rehabilitation Clinical Hospital Baile Felix, for a period of one year, which was followed by prescribing procedures with thermal water. The total number of procedures carried out in 2011 in Clinical Rehabilitation Hospital Baile Felix is 773095, from which the percent represents 21,40% procedures based on thermal water. The therapeutic effects of thermo-mineral water of Baile Felix recommend it for balneofizical and relaxation treatment.*

**Key words:** incidence, thermal water, quality, pain, procedure, outpatient

### INTRODUCTION

Old documents attest the use of baths in treating various disorders since the year 1000, when thermal springs were discovered by Felix, vicar of the monk of the monastery of Szentmárton (Sînmartin).

Between 1711-1721 appear first organized establishments for treatment under the name "Felix's bath", and in 1885 it captures a new spring with a temperature of 49°C.

Spa treatments that use as a natural curative factors radioactivity is based on low doses used at large intervals.

Biological action is directly proportional to ionization, respectively the number of ion pairs dial over a distance of 1 cm of tissue. Quick removal from the body of the radioactive source, once completed, is another important factor which must take into account.

Radon is most advantageous from this point of view, because the biological half life and physically is reduced. Used in the form of baths, gas is taken from the skin, directly proportional to the temperature of the water in the bathroom.

The natural content of Radium in the body is around  $10^{-12}$ g Ra/g tissue. The highest dose, that is not harmful, of Radium is 100-1000 times higher than normal levels in the body.

Indications for treatment with radon is addressed particularly rheumatic diseases, hormonal disorders, skin disorders and dystonia and peripheral circulatory disorders.

Natural therapeutic factor used in Baile Felix is thermal mineral water with a temperature between 41-49 ° C and a total mineralization of about 1 g/l. In terms of chemical composition, waters from Felix are sulfate, calcic, sodic, oligomineral, silicate.

#### **MATERIAL AND METHODS**

We study a number of 18276 patients treated in the Rehabilitation Clinical Hospital Baile Felix, 5561 treated in conditions of hospitalization and 12715 in outpatients (Fig. 1).

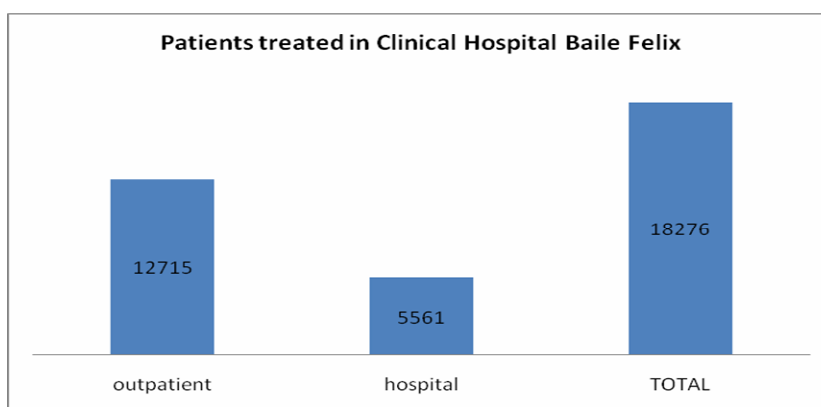


Fig. 1. The distribution of patients treated in Rehabilitation Clinical Hospital Baile Felix

The study is retrospective, the necessary data being taken from the Register of Consultations for ambulatory patients treated, Single Register of Admissions for patients hospitalized and records procedures for all patients.

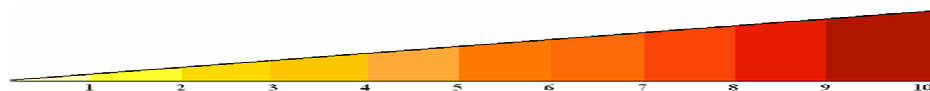
For objective and correct assessment of the patients we used the following standardized assessment methods: to assess pain we used analogue scale (VAS) Visual (0-10) and the scale of assessment of the quality of life.

Each area is ranked from 0 to 10 points and the index of quality of life is obtained from the sum of the 6 areas.

### Visual analog scale VAS – for evaluation of pain (202)

0 – without pain

10 – maximum pain



### Scale of assessment of the quality of life

#### Good disposition

Normal 0 1 2 3 4 5 6 7 8 9 10 Absent

#### The ability of movement

Normal 0 1 2 3 4 5 6 7 8 9 10 Absent

#### Work

Normal 0 1 2 3 4 5 6 7 8 9 10 Absent

#### Interpersonal relations

Normal 0 1 2 3 4 5 6 7 8 9 10 Absent

#### Sleep

Normal 0 1 2 3 4 5 6 7 8 9 10 Absent

#### Availability for social activities

Normal 0 1 2 3 4 5 6 7 8 9 10 Absent

A recovery method recommended at significant number of patients treated in Clinical Rehabilitation Hospital Baile Felix is hydrokinetotherapy at the pool. In our clinic, all patients have benefited from the therapeutic effects of the natural factor of thermal oligomineral water (temperature at spring 41 - 49 ° C, with a total mineralization around 1 g/l, hypotonic, calcium, sodium, silicated, weakly radioactive), used in the external cure.

Hidrokinetotherapy with thermal water has been carried out individually or in groups, at 37 ° C, daily, with lasting 20-30 minutes. Hidrokinetotherapy allows:

- use a reduced muscle forces in joint mobilization
- increase capacity muscular relaxation for orthostatic posture and gait
- decreases pain by reducing joint intra-articular pressure
- effect of temperature, improve the circulation in the territory of striated muscle, the direct effect on the smooth muscles of the vessels. Perhaps, by the action of the central nervous system, hipertemia induces a relaxing effect.

- general sedative effects

Hidrokinetotherapy combines the therapeutic effects of hidrothermoterapy with those of the kinetotherapy, the latter being facilitated by painkillers, muscle relaxants properties of hot water.

Hidrokinetoterapia offers multiple possibilities of recovery. By lowering the water level can get progressive loading conditions of the lower limbs.

Statistical analysis was done using SPSS software products and EXCEL version 2003, Microsoft and have plotted the data in the presentation most appropriate to better highlight the essential elements that characterize the phenomena studied.

## RESULTS AND DISCUSSION

The analysis of the patients investigated by sex shows that female sex predominates face of the male in the proportion of 60% (Fig. 2)

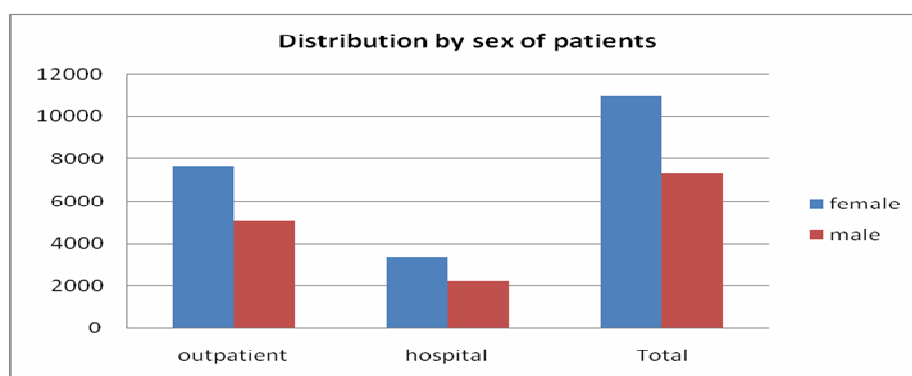


Fig.2. Distribution by sex of the patients treated in rehabilitation Clinical Hospital Baile Felix

Depending on the environment of origin was made dividing the counties Bihor County, being represented by a percentage of 40%, and the rest from all over the country (being the hospital of national interest).

The total number of procedures carried out in 2011 in Clinical Rehabilitation Hospital Baile Felix is 773095, of which the number of procedures without thermal water is 607625 (Fig. 3), the number of those based on thermal water being 165470.

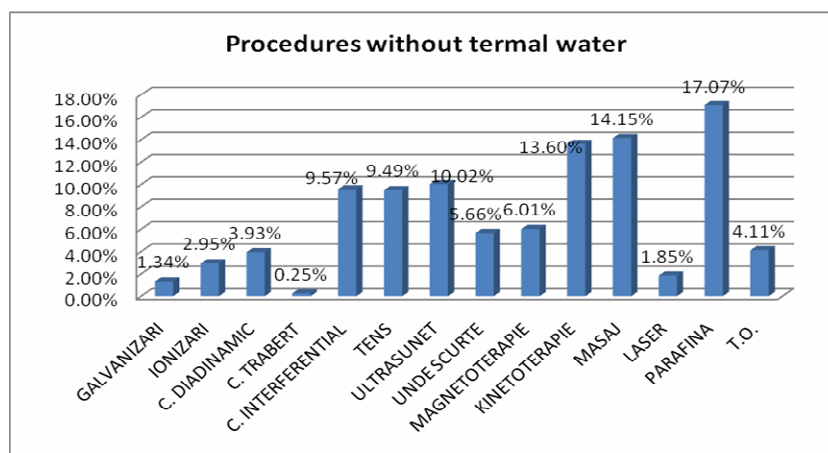


Fig.3. Procedures without thermal water

The total number of procedures with thermal water of the rest of all procedures is represented in the figure above, in a percentage of 21,40% (Fig.4 ).

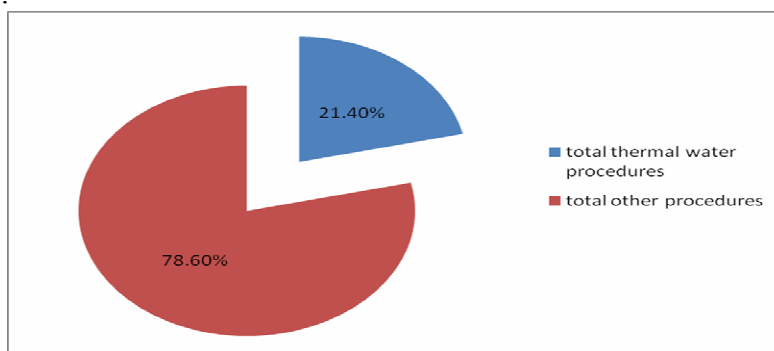


Fig.4. Thermal water procedures reported to all procedures

Procedures based on thermal water cure recommended in patients treated in this hospital are: Stanger baths, Galvanic baths, underwater shower, HKT, pool, alternating baths, trefla (Figure No. 5.)

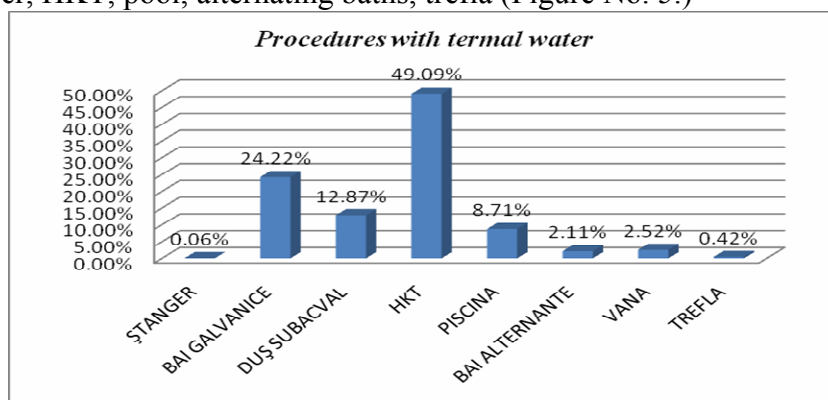


Fig. 5. Thermal water procedures

#### VAS results

- **Assessment of pain score**

Pain was assessed using the VAS scale at admission and after 14 days.

*Tabel nr. 1.*

VAS score evolution		
	VAS 0	VAS 14
Males	7,7	2
Females	7,9	2,2
Averadge	7,8	2,1

The evolution of pain score after 14 days of treatment, show a statistically significant decrease, compared to the original values ( $p < 0.001$ ).

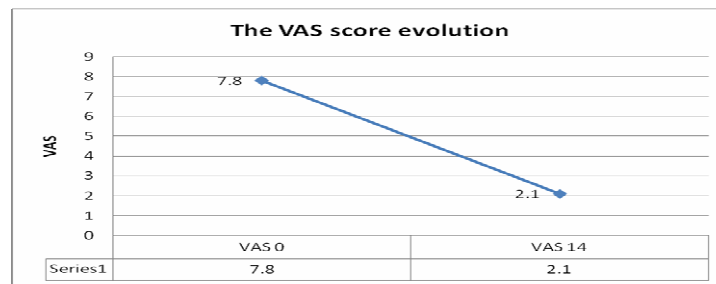


Fig. 6. VAS score solution

#### Quality of life evaluation

Quality of life is an important parameter in clinical research and in the practice of patient care. It reflects the way that patients perceive and react to their state of health and integrates physical, functional, emotionally and mentally wellbeing.

*Tabel nr. 2.*

Quality of life depending on the sex of the patients		
	Initial	After 14 days
Males	4,45	1,31
Females	5,2	1,47
Averadge	4,93	1,41

Quality of life questionnaire shows that when recovery is complete, weather sensitivity, joint pain, muscle fatigue, and sleep disorders have dwindled to almost all subjects along with getting an increased muscle tone.

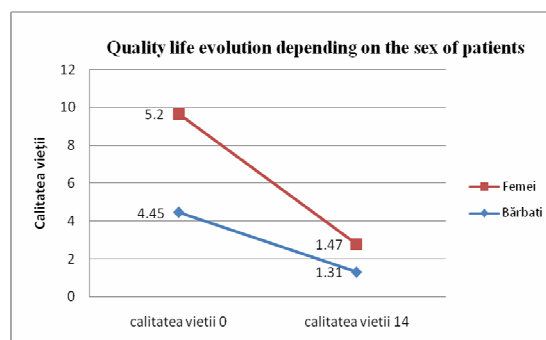


Fig. 7. Quality life evaluation depending on the sex of the patients

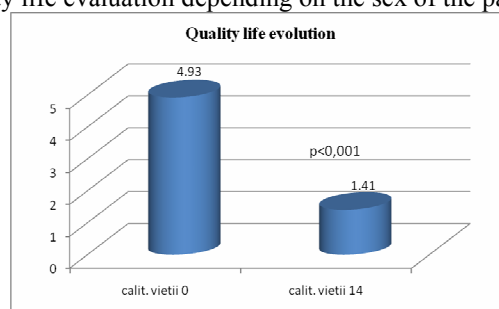


Fig. 8. Quality life evolution

## CONCLUSION

- In our study female patients predominates, from Bihor county in a percentage of 40% of the patients treated at the Clinical Hospital Rehabilitation Baile Felix.
- The total number of procedures carried out in 2011 in Clinical Rehabilitation Hospital Baile Felix is 773095, from which the percent represents 21,40% procedures based on thermal water.
- The evolution of pain score after 14 days of treatment, show a statistically significant decrease, compared to the original values ( $p < 0.001$ ).
- Quality of life index used in our study is sensitive to change in all of its areas, except for family support and the ability to work, which remained unchanged during monitoring of patients.
- Rehabilitation treatment has success if there is a good collaboration in the recovery team consisting of doctor-patient- physical therapist.
- Balneo-fizical-kinetic therapy represents an alternative to patients with contraindications, intolerance, side effects (allergies) to drug therapy AINS.

- În concluzie, efectele terapeutice ale apelor termo-minerale din Băile Felix o recomandă cu toată încrederea atât pentru tratamentul balneofizical cât și pentru relaxare și agrement.
- In conclusion, the therapeutic effects of thermo-mineral water of Baile Felix recommend it with all confidence for both balneofizical and treatment for relaxation.
- Tratamentul fizical complex asociat cu terapia balneară permite o ameliorare simptomatică, funcțională și a activității bolii, precum și stării psihice într-un interval scurt de timp la pacienții tratați în Spitalul Clinic de Recuperare Medicală Băile Felix.
- Fizical complex treatment associated with balnear therapy allows a symptomatic improvement, as well as improvement of the mental condition in a short span of time for the patients treated in the Clinical Rehabilitation Hospital Baile Felix.

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