

Frequency, Severity and Duration of Early Spa Reactions in Patients attending the Gastein Healing Gallery (GHG)

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Background:

The GHG combines several treatment factors such as exposure to low level radon and to high numbers of negative ions, high humidity and mild hyperthermia in a moderate altitude (1280 m) above sea level. Early spa reactions, including short-term worsening of specific (e.g. pain) or general symptoms (e.g. fatigue) or a deterioration of sleep quality within the first week of the interventions, to repeated thermal triggers are clinically well known. Such reactions are hypothetically mediated by autonomous nervous system (ANS) processes. The GHG treatment factors have a considerable impact on the ANS, a system that adapts rapidly to environmental and internal stressors. Hence, it is plausible that some patients will develop spa reactions in the course of the treatment. In fact, these events are regularly reported by the patients in our clinic. Therefore, our objective was the systematic assessment of frequency, severity and duration of early spa reactions in patients who attended the GHG for the first time for treatment sessions.



Picture: Gastein Healing Gallery Clinic.

Methods:

We conducted an anonymized online survey with patients who attended the GHG for the first time in the year 2020. Four-hundred-forty patients with a variety of diseases who experienced 4 to 13 sessions during their stay were invited to participate. In addition to socio-demographic and disease related variables (i.e. main diagnoses), we assessed the potential spa reactions of night sweats, increased pain and fatigue, lack of strength, and sleeping problems in terms of their occurrence, severity and duration (answer format: yes/no; mild/moderate/severe; lasting 1-2 days/3-4/5-6).

Results:

In total, 93 patients responded (21%). The diagnosis of fibromyalgia was indicated in 24 cases (19% of all diagnoses), ankylosing spondylitis in 19 (15%), rheumatoid arthritis in 10 (8%), psoriatic arthritis 9 (7%), polymyalgia rheumatica 6 (5%), spine disorders in 14 (11%), osteoarthritis at different regions in 23 (19%) and other diagnoses in 18 cases (16%) (multiple answers were allowed). The mean age was 57 years (SD 10,4) and 36% of participants were male. The mean number of sessions was 8,9 (SD 2,1) and the median was 9 sessions. The results of the spa reaction items are depicted in table 1. In some of them there were significant differences (chi-square test).

Spa reaction items	Appearance in patients, n (%)	Severity of symptoms, n (% of affected patients)			Duration of symptoms, n (% of affected patients)		
		Light	moderate	Severe	1-2 days	3-4 days	5-6 days
Night sweats	18 (20)	7 (39)	6 (33)	5 (28)	7(39)	5 (28)	6 (33)
Increased pain	29 (31)	10 (34)	13 (45)	7 (21)	1 (3)	10 (34)	18 (63)
Sleeping problems	25 (27)	7 (28)	14 (56)	4 (16)	4 (16)	9 (36)	12 (48)
-falling asleep	12 (43)						
-wake up in the night	16 (47)						
Reduced general health		14 (30)	25 (53)	8 (17)	8 (17)	16 (24)	23 (49)
-increased fatigue	45 (48)						
-lack of strength	27 (29)						
-loss of motivation	19 (20)						

Table 1: Frequency, severity and duration of different spa reactions. Bold numbers indicate significant differences at $p < 0,05$.

Conclusions:

To our knowledge this is the first time that early spa reactions were assessed systematically for patients seeking mild radon-hyperthermia treatment. In this diverse sample, early spa reactions were frequent. Fatigue and increased pain occurred in 48% and 31% of the patients followed by lack of strength in 29% and sleeping problems in 27% patients, respectively. In most patients these symptoms were moderate and persisted at least 5 to 6 days. Our results can be used to educate GHG patients in greater detail prior to their treatment about potential spa reactions. Our findings also have implications for future research. For example, some patient reactions are mediated by the ANS and it would be interesting to monitor heart rate variability, a surrogate parameter of the ANS, to assess the physiological processes underlying this phenomenon.