

Research and Documentation Centre for Therapeutic Outcomes FDTE

Foundation and Advisory Board Coaching For Health

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Treatment of states of exhaustion in women during the age of menstruation (Ferritin deficiency)

*** Introduction**

A controversial topic that has been discussed for many years in scientific periodicals is here brought up again: the significance of ferritin deficiency in states of exhaustion. It is generally accepted that people suffering from chronic bleeding develop ferritin deficiency, so that a substitution therapy is essential. Till now, this has been carried out by means of tablets or drops, although experts generally know that only in rare cases is this really helpful for people with chronic blood deficiency. The problem is the insufficient resorption (in the intestine) of the swallowed medicine, so that the actual effect is insufficient. In addition, there is the not-uncommon secondary effect of abdominal complaints, so that many patients stop taking their medicine on their own. Insufficient compliance (patients stop taking their medicine after a certain time because they don't notice an effect.) also makes treatment with iron lozenges or drops more difficult. The British medical journal reported, in a paper published at the end of 2003, that the effect of peroral (swallowed) medicinal iron is unsatisfactory, especially in women during the age of menstruation.

The Research and Documentation Centre for Therapeutic Outcomes is searching for new ways to maximise treatment strategies be it within school medicine, as in the present example, or in conjunction with complementary healing methods (publication in preparation).

As the usual treatment with iron lozenges produces unsatisfactory results, an alternative using short iron-infusions was investigated in regard to the cost / effectiveness ratio.

*** Abstract**

760 patients from the practice of a family doctor were monitored with regard to their diagnosis-structure. This investigation concerned women in the age of menstruation (from the age of about 13 to 50, all together 206), of which 88 (42%) were suffering from states of exhaustion. 92% of these patients showed ferritin deficiency.

206 women under 50 years were compared to 282 men. In addition, 99 women with states of exhaustion with a coincidental lack of stored iron (ferritin deficiency) were treated with medicinal iron. 88 of them were treated with short iron-infusions, 11 with iron lozenges. The treatment with tablets of women in the age of menstruation had to be stopped for ethical reasons, because the outcome was statistically significantly worse compared to the intravenous treatment, and the majority of the patients were suffering from the same symptoms as severely as before treatment.

The primary symptoms of women with **ferritin deficiency** are states of exhaustion, depression, sleep disturbances, and muscle and joint pain. An investigation was carried out to determine how many of the female patients concerned had ferritin storage deficiency compared to the male patients. It was shown that the female patients with the depicted symptoms suffered significantly more often from ferritin deficiency (42%) than the male comparison group (6%).

86% of the female patients who were treated with **short iron-infusions** showed distinct improvement regarding their exhaustion. (Criterion: symptom-free, or distinct improvement). The remaining 14% felt no, or only little, improvement. No patient felt worse after the medical treatment.

With the concomitant symptoms the results after treatment with short iron-infusions were also clearly positive. (With depression 57%, sleep disturbances 69%, and with rheumatic troubles 67%).

The group of people who were treated with **iron lozenges** showed a positive outcome of only 27%.

Medical treatment with short iron-infusions caused clearly better results regarding both the outcome and the cost / effectiveness ratio.

As the majority of the presented facts originate from one single medical practice, a generalization is not possible. If these observations are confirmed by other studies the following should be borne in mind:

Significance for family doctors. gynaecologists and female patients:

A) Many women within the age of menstruation suffer from states of exhaustion due to ferritin deficiency. Every third to tenth of these suffers from additional symptoms.

These symptoms are much more frequent than generally assumed.

B) When ferritin deficiency is detected, the outcome of medical treatment with short iron-infusions is clearly better than that of the current therapy with iron lozenges.

C) Ferritin deficiency is ten times more often the cause of states of exhaustion than hypothyreosis.

Action points:

D) Women with the described ferritin deficiency symptoms,(states of exhaustions in all, depression in a third and sleep disturbances as well as muscle-joint pain in one

eighth to one tenth of those concerned) should have their level of ferritin in the blood checked regularly.

E) When ferritin deficiency is determined in conjunction with the above-mentioned symptoms, medical attention with short iron-infusions should be preferred to medical treatment with iron lozenges (except in pregnant and nursing women as well as women known to be allergic to the infusion).

F)..People with chronic fatigue syndrome (CFS) should be tested for ferritin in the blood.

Internet-researches have demonstrated that 70% of the people with CFS show identical symptoms as with ferritin deficiency.

*** Methodology**

Data collecting concerning diagnosis, symptoms and laboratory-results

As a matter of routine, female and male patients with states of exhaustion were tested regarding ferritin and TSH (thyroid gland stimulating hormone). These persons were asked about further symptoms such as depression, sleep disturbance and pain in muscles and joints. This served in the evaluation of the epidemiology and the establishment of diagnostic criteria.

Because of the significantly increased appearance of the ferritin deficiency syndrome (ferritin value under 50 ng/ml) in women within the age of menstruation, female patients under 50 years were selected and especially evaluated.

For the digital archiving and evaluation of the data the practice software MEDAOPT was used. (real-time comprehension of the most often given diagnosis during consultations.)

Data collection concerning the evaluation of medical treatment results, and cost / effectiveness ratio:

Feedback about the efficiency of medical treatment was collected after one, three and six months. Some feedback was obtained during consultations, some by phone, and some questionnaires were sent by mail. There were five categories for evaluation, using language within the patient's grasp:

Free of symptoms

clearly better

slightly better

unchanged

worse

The five categories were then reduced to three for the purpose of simplification. The categories "free of symptoms" and "clearly better" were combined to form the successful group. "Slightly better" and "unchanged" together became the unsuccessful group, and the "worse" category kept its name.

The next question concerned the percentage of success in each category.

Both the patient and the doctor can easily find out the costs of a treatment.

A special formula was created to determine the cost / effectiveness ratio:

Cost /effectiveness ratio:

10 x costs after 3 months divided by the square of the calculated outcome of the medical treatment after three months. (see appendix 2)

As soon as there are enough results, the cost / effectiveness ratio can be used as signpost for future medical treatment and assignment.

For the calculation of the results and the cost / effectiveness ratio the computer program GIGAOPT, especially developed for clinical benchmarking, was used.

*** Results**

1) Epidemiology / Diagnostic

Results concerning the epidemiology (distribution of symptom frequencies in different patient groups) and treatment results concerning the diagnostic:

There is a significant difference in frequency of ferritin deficiency between women under 50 years and men. Of the above mentioned women (206) 90 (42%) were suffering from states of exhaustion, of the men (282) only 16 (6%). Ferritin deficiency was found in 81 (39%) women under 50 years and in 3 (1%) men. Female patients with states of exhaustion had, on the average, similar values of ferritin before medical treatment, whether with or without accompanying symptoms.

The most frequent symptoms of ferritin deficiency (women under 50) are:

states of exhaustion (97%)

depression (32%)

sleep disturbances (12%)

pain in muscles and joints (13%)

Details and a graphic summary are available as download (epidemiology / diagnostic)

2) Treatment results

Outcome of medical treatment of states of exhaustion with ferritin deficiency:

Medical treatment with short iron-infusions produces better results than iron lozenges. After 3 months 86% of the female patients with infusions belonged to the successful group, of those who took tablets only 27%. (see appendix 1)

Success quota of short iron-infusion treatment in depression with ferritin deficiency:

In depressed women under 50 years an improvement (successful group) of 57% was observed.

Success quota of short iron-infusion treatment in sleep disturbances with ferritin deficiency:

In female patients under 50 years with sleep disturbances the success quota was 69%.

Success quota of short iron-infusion in cases of pains in muscle and joints with ferritin deficiency:

Of the female patients under 50 years with pains in the muscle-joint mechanism 67% belonged to the successful group after medical treatment.

The results regarding the exhaustion treatment are clear, due to the large number of patients (99). There are, however, too few results concerning the other symptoms to draw any clear conclusion.

Details and graphic abstracts download (results of medical treatment) are available.

3) Laboratory findings

Women who were treated with short iron-infusions had, on the average, 23 ng/ml ferritin. (Between 20 and 200 is generally regarded as normal) .After the medical treatment the value was 216. 3 months after the end of medical treatment the ferritin value was always lower. (Loss of blood due to menstruation, and, often, a diet containing no red meat.)

4) The cost / effectiveness ratio:

The formula is given under methodology.

Until now there was no formula for the efficiency of medical treatment. FDTE offers, for the first time, a mathematical formula with which it is possible to judge whether a particular medical treatment is justified or questionable.

The cost / effectiveness ratio with infusions is 0.88. The one after medical treatment with tablets is 2.74 (the higher, the worse, see appendix 2)

Medical treatment with short iron-infusions:

- Success quota after 3 months, 89%
- Costs after 3 months 700.- CHF
- Cost / effectiveness ratio 0.88

Medical treatment with iron lozenges:

- Success quota after 3 months, 27%
- Costs after 3 months 200.- CHF
- Cost / effectiveness ratio 2.74

Since the success quota as well as the cost / effectiveness ratio support infusion therapy, this should be accepted as therapy of choice (treatment with iron lozenges had to be stopped for ethical reasons).

Details of the calculation formula (download) can be found in the medical results documentation.

Ferritin deficiency in comparison to hypothyreosis (thyroid gland-underfunction) as cause of states of exhaustion.

Ferritin deficiency showed up ten times more often than hypothyreosis in women under 50 years with states of exhaustion. In text-books and internet-guidelines the analysis of TSH (thyroid gland stimulating hormone, which is increased in cases of underfunctioning) is considered indispensable. Ferritin deficiency is only mentioned in some of the publications. Should further research affirm our results, the request to check ferritin levels in cases of exhaustion would be justified.

*** Interpretation**

Considering the publications of the last decades, the outcome of this evaluation is very surprising.

The online-monitoring of female patients for 6 months in correlation with their laboratory values enables us to recognize important correlations. Only by comparing centralised data from everyday life with patient-friendly questionnaires and a strategy compatible with everyday life to obtain the facts as well as the analysis of costs and results, will it be possible to achieve clinical benchmarking.

In this way it will be possible to transform every day-information, in the form of returned reports, into directions for medical treatment.

The outcome of these submitted investigations should result in broad therapeutic consequences.

Most of the authors of various publications affirm that at least 30% of women of menstruation age suffer from exhaustion due to ferritin deficiency.

At the same time most of the authors agree that treatment with iron lozenges, particularly in women of menstruation age often produces unsatisfactory results.

It is possible that ferritin deficiency plays a fundamental part in female patients with chronic fatigue symptom. Very similar symptoms to those of ferritin deficiency are reported in the literature and from self-help groups.

The results of this study strongly suggest that increased therapeutic steps be taken. Women must be informed of these facts and if there is a suspicion of ferritin deficiency, the level should be checked so far as this hasn't been proposed by the family doctor or gynaecologist. And should ferritin deficiency actually be detected, the patient must have the right to be treated with short iron-infusions.

Finally, we would like to see the figures presented here, resulting from one medical practice, be put in relation to investigations of others. We thus invite all medical doctors to collect the courses of treatment of exhausted women during their entire period of menstruation and send them to. www.FDTE.ch .

We would be most grateful to all those who participate. The more statistics we get the clearer the signpost will be.

*** Action points**

Ferritin deficiency seems to be much more common than assumed up to now.

The results of this study should be compared with those of other doctors to confirm or relativise them.

Ferritin diagnosis could be regarded differently in medical diagnostic. Ferritin should be measured as a matter of routine in all menstruating women. Experience shows that women with a value higher than 50-70 ng/ml have a better quality of life. Because of chronic bleeding due to menstruation an annual ferritin check-up should be recommended so that women can get a short iron-infusion in time. Collected experience of 2 years shows that after a saturation the next short iron-infusion is essential after between 3 and 6 months in order to avoid values under 70. The intervals can be determined individually.

The syndrome of ferritin deficiency has many similarities to the chronic fatigue syndrome (CFS). An inquiry should show how many female (and male) patients with CFS have insufficient ferritin levels.

To replace depleted iron supply (filling an empty storage) short iron-infusions are significantly more successful than medical treatment with iron-lozenges or drops. The cost / effectiveness ratio with intravenous treatment is also better. These facts should have both therapeutic and economic consequences.

The prevailing lower standard-value of 20 ng/ml for ferritin in women has to be raised to at least 50. Experience with our patients shows that some women start to suffer from beginning ferritin deficiency with a ferritin-value of 70.

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Appendix 1: quotas of success

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Ferritin deficiency in states of exhaustion

Quotas of success in %

Medical treatment with iron-short-infusions

Quantity

Medical treatment with iron lozenges

Quantity

Free of symptoms or clearly better

Unchanged or slightly better

clear statement

Result:

Medical treatment with iron lozenges is not successful for the treatment of states of exhaustion due to ferritin deficiency

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Ferritin deficiency in states of exhaustion

Cost / effectiveness ratio after 3 months

Cost / effectiveness ratio formula of FDTE

10 x costs after 3 months

(Quota of success after 3 months)²

Medical treatment with short iron-infusions

Quota of success after 3 months, 89%

Costs for 3 months: 700.- CHF

10 x 700

89 x 89

cost / effectiveness ratio=0.88

Medical treatment with iron lozenges

Quota of success after 3 months, 27%

Costs for 3 months 200.- CHF

10 x 200

27 x 27

cost / effectiveness ratio= 2.74

Result: Medical attention with iron lozenges with states of exhaustion due to ferritin deficiency are economically useless

Appendix 3: cost / effectiveness ratio

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Ferritin deficiency in states of exhaustion

Research and Documentation Centre for Therapeutic Outcomes FDTE, January 2004

Cost / effectiveness ratio after 3 months

Cost / effectiveness ratio formula of FDTE:

10 x costs after 3 months

(quota of success after 3 months)²

Graph for iron lozenges

Graph for short iron-infusions

Medical treatment with iron lozenges makes no sense either in terms of national health or economic feasibility for female patients with states of exhaustion out of ferritin deficiency.

In this diagram quotas of success and costs of a treatment are considered as well as the pressure of suffering (PS) of the patient.

In the computer programm of FDTE the scale of cost /effectiveness ratio reaches 60.

Generally there are many treatments which are from experience expensive and help little. These cost / effectiveness ratio are on the right side at the top.