PRISCOL AS AN AID TO IRON THERAPY IN ANAEMIA

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(*Received on May 5, 1960.*)

It is a well known fact that an acid reaction in the stomach is of prime importance for the proper dissociation of iron salts, and absorption of iron. This is why dilute hydrochloric acid is prescribed along with iron in the treatment of hypochromic microcytic anaemia, specially in the presence of hypochlorhydria.

The second point of importance is the stimulant action of priscol on the gastric acidity, as proved by the study of Nasio (1944) and the work of Sherif *et al.*, (1957).

Taking these two facts in consideration, the following question arose, "Can we prescribe priscol to raise the gastric acidity, in order to have a better iron absorption, when treating a case of hypochromic microcytic or iron deficiency anaemia ?"

The drugs used in this work were the following:

1. Ferrous gluconate (Ferronicum, Sandoz) 200 mg. tablets
2. 2-benzyl imidazoline hydrochloride (Priscol, Ciba Pharma) 25 mg. tablets.
3. Dilute hydrochloric acid (B. P.)

MATERIAL AND METHOD

This report pertams to 20 anaemic male patients of different age groups, ranging from 12 to 50 years. Their haemoglobin level ranged from 18 to 67 percent. All were in-patients to Manial University Hospital throughout last year.

On admission every one of them was examined clinically, and his blood picture determined. A day later, while fasting his gastric juice was tested for the level of acidity, and for its response to an intramuscular injection of 10 mg. priscol. Then, all subjects were put on the standard hospital diet, and given two tablets Ferronicum thrice daily. After ten days, the estimation of red cell count and haemoglobin percentage was repeated. Then they were classified into two groups, of 10 patients each. The first group received one tablet of Priscol during each meal to be followed by the usual dose of Ferronicum. The other group was put on a teaspoonful of dilute hydrochloric

acid given in a glass of water during meals, and two tablets of Ferronicum as usual. Ten days later, after estimating the haemoglobin percentage and the red cell count, the two groups interchanged their therapy i. e. the first group took dilute hydrochloric acid, while the second received priscol in addition to Ferronicum. Lastly, the haemoglobin percentage was estimated and the red cell count done.

RESULTS

The results of the present work have been summarised in a table which shows the rise of haemoglobin percentage per day under the effect of Ferronicum alone, then with dilute hydrochloric acid and Ferronicum, and lastly with Priscol and Ferronicum.

Case IX had an attack of acute tonsillitis while under Ferronicum, and case XV developed advanced liver cirrhosis, pellagra and multiple vitamin deficiency. So both cases were excluded.

From the table, it can be seen that the average daily rise of haemoglobin caused by Ferronicum was 0.85% (0.4-1.75).

This was nearly doubled when Priscol was added. Thus, the response amounted to an average of 1.69% (0.75-3.00). On the other hand, the average daily rise of haemoglobin percentage when dilute hydrochloric acid was used with Ferronicum was only 1.05% (0.50-2.00).

Moreover, there was no change in the response of 5 cases after the addition of dilute hydrochloric acid to Ferronicum, in contradistinction to the bigger amount of haemoglobin rise noticed in every case when Priscol was used. The only exceptions to this observation were two, namely cases VIII and XII. These patients had achylia gastrica which did not respond to Priscol injection. This is why their response to Ferronicum was the same before and after Priscol administration. When they were given dilute hydrochloric acid the former showed a greater daily rise of haemoglobin percentage while the response of the latter was not altered.

Few undesirable side effects were noticed during this work, most of which were with hydrochloric acid. A few patients had mild diarrhoea and tachycardia while taking Priscol. But no one complained about Ferronicum.

TABLE I

Showing the daily rise of haemoglobin percentage

No.	Ferronicum	Dilute Hcl+ Ferronicum	Priscol+ Ferronicum
1	1.000	1.000	1.250
2	0.500	1.000	1.500
3	0.500	1.000	2.125
4	0.400	0.750	1.500
5	1.750	2.000	3.000
6	1.125	1.250	1.750
7	1.125	1.125	2.250
8"	0.200	0.500	0.200
9x	—	0.500	1.125
10	1.000	1.250	1.500
11	1.000	1.000	1.250
12"	0.400	0.400	0.400
13	0.500	1.000	1.500
14	0.500	1.000	2.125
15x	0.400	0.600	0.750
16	0.400	0.750	1.500
17	1.750	2.000	3.000
18	1.125	1.125	1.750
19	1.125	1.500	2.250
20	1.000	1.125	1.500
Total	15.400	18.875	30.360
Mean	0.860	1.05	1.69

x Excluded.
" Achylia.

DISCUSSION

In the present study, on using 6 tablets Ferronicum the average daily rise of haemoglobin percentage was 0.86%. This is very near the figure given

by Ludin (1949) which was 1 ± 0.2%, and that got by Olfat (1954) which was 0.92% during her work on pregnant Egyptian females.

When dilute hydrochloric acid was given, 13 out of the 18 patients showed a better response to Ferronicum. This agrees with the work of Ludin (1949) who found that on addition of dilute hydrochloric acid there was no increase in iron absorption when the gastric acidity was normal; in contrast to cases with achlorhydria where a bigger response was seen.

Similarly Hein and Keibl (1950) while working on 6 anæmic patients having achylia gastrica refractory to histamine, found that the response was better in only four subjects after administration of dilute hydrochloric acid.

Accordingly, the lack of response to dilute hydrochloric acid in nearly 30percent of the cases of the present work can be explained by these subjects having normal gastric acidity. Moreover, in patients with achlorhydria the usual doses of acid given are ineffective in appreciably modifying the gastric acidity; remembering that sufficient dosage of acid cannot be given due to the appearance of marked side effects.

When using priscol with Ferronicum the average daily rise of haemoglobin percentage was much more than that noticed when iron was given either alone or with dilute hydrochloric acid. Moreover, this increase in response was constant, except in patients having achlorhydria not responding to Priscol as detected by the test meal.

These findings in addition to the side effects of dilute hydrochloric acid, make us prefer to use priscol to with iron in the treatment of hypochromic microcytic or iron deficiency anæmia, which is of common occurrence in Egypt, specially secondary to low iron intake and ankylostomiasis.

SUMMARY

The average daily rise of hæmoglobin percentage in 20 anaemic patients taking 6 tablets Ferronicum was 0.86%.

On adding 5 cc. dilute hydrochloric acid it became 1.05%. This increase was noticed in only 70% of the cases.

Ingestion of Priscol (1 tablet T.D.S.)increased the daily haemoglobin rise to an average of 1.69%. This rise was constant except in those with achylia gastrica refractory to Priscol.

Discussion of the results and comparison with previous works is given.

CONCLUSION

Priscol can be effectively used as an aid to iron in the treatment of hypochromic microcytic anaemia.

ACKNOWLEDGEMENT

I am grateful to Messrs Sandoz Ltd. for supplying me with Ferronicum and Messrs Ciba Pharma for providing Priscol.

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