Eur J Cancer Clin Oncol, Vol. 23, No. 7, pp. 1077–1078, 1987.
Printed in Great Britain

0277-5379/87$3.00+0.00

Letter to the Editor

Significance of Serum Ferritin in Patients with Gastric and Colorectal Cancer

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AT PRESENT there is no agreement on the significance of serum ferritin in patients with gastric or colorectal cancer. Ferritin levels have been reported to be either normal or increased in both these diseases, while other investigators reported increased ferritin levels in patients with hepatic metastases only [1–4].

The purpose of the present study was to evaluate serum ferritin levels in healthy subjects and in patients with gastric or colorectal cancer and to verify a possible correlation of ferritin levels with the stage and the grade of the disease. Sixty-two subjects operated for gastric cancer and 46 patients operated for colorectal cancer were part of the study. Eighteen healthy members of the medical staff were used as controls. Serum ferritin determination was performed preoperatively by an immonoradiometric assay (Fer-Iron kit, Ramco Laboratories, Houston, Texas, U.S.A.). The results were similar in both neoplasms.

Table 1 shows the mean ferritin levels in the control group compared with patients with gastric and colorectal cancer. The mean values in cancer patients are significantly higher than in the control group ($P < 0.005$). Although the values found in stage IV (UICC) in gastric cancer patients and in stage D (Dukes) in colorectal cancer patients appear to be higher, the difference between the various stages is not significant.

Similarly, no significant correlation exists between ferritin levels and histologic grade evaluated in 48 gastric cancer patients (well differentiated: 133.8 ± 33.2 μg/l; moderately differentiated: 151.1 ± 43.0 μg/l; poorly differentiated: 162.6 ± 39.5 μg/l) and in 46 colorectal cancer patients (well differentiated: 165.7 ± 38.0 μg/l; moderately differentiated 141.0 ± 27.5 μg/l; poorly differentiated: 280.0 ± 97.0 μg/l).

Finally, the individual values of ferritin in gastric and colorectal cancer patients subdivided in accordance with the stage of the disease are shown in Figs. 1 and 2. The normal upper limit was considered to be the mean ± 2 S.D. of control subjects (71.1 ± 104.4 μg/l): ferritin values above this limit were found in 29% of gastric cancer

Table 1. Serum ferritin mean values in control subjects and in patients with gastric or colorectal cancer subdivided in accordance with the stage of the disease

Group	No. of patients	Ferritin (μg/l) mean ± S.E.
Control	18	71.1 ± 12.3
Gastric cancer		
Total	62	170.8 ± 31.3
Stage I	7	184.3 ± 41.6
Stage II	24	154.5 ± 38.8
Stage III	15	117.5 ± 36.8
Stage IV	16	239.4 ± 99.7
Colorectal cancer		
Total	46	166.0 ± 24.1
Stage A	1	10.0 ± 0
Stage B	22	140.6 ± 38.5
Stage C	9	170.8 ± 54.0
Stage D	14	214.0 ± 36.5

Accepted 12 February 1987.
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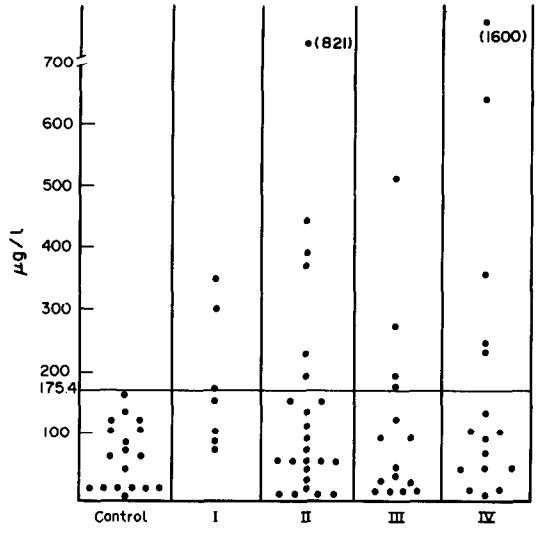

Fig. 1. Individual values of ferritin in control subjects and in gastric cancer patients subdivided in accordance with the stage of the disease. The continuous line represents the upper normal limit (mean ± 2 S.D. of control subjects).

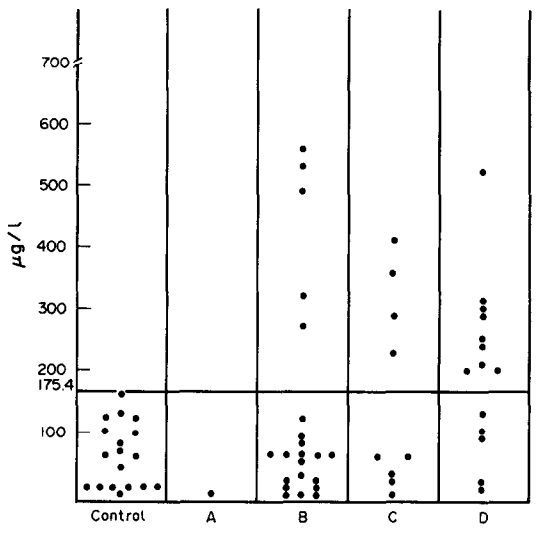

Fig. 2. Individual values of ferritin in control subjects and in colorectal cancer patients subdivided in accordance with the stage of the disease. The continuous line represents the upper normal limit (mean ± 2 S.D. of control subjects).

patients ($P < 0.01$) and in 39% of colorectal cancer patients ($P < 0.01$).

In conclusion, serum ferritin appears to be increased in both gastric and colorectal cancer, but its sensitivity is too low to suggest clinical usefulness of ferritin alone as a marker for these tumors. No significant relationship has been found between ferritin levels and the stage or the histologic grade of the tumor.

Since several forms of ferritin (isoferritins) have been identified and the more acidic ones are electively increased in cancer patients [5], it is possible that the development of assay methods more specific for isoferritins produced by gastric and colorectal cancer could increase the value of ferritin as a marker for these neoplasms.

Acknowledgements—This investigation was supported by a grant of the Associazione Italiane per la Ricerca sul Cancro.

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