RAPID COMMUNICATION

A New Treatment for Polycythemia Vera: Recombinant Interferon alfa

By Richard T. Silver

Recombinant interferon alfa, a natural product with growth inhibitory capabilities, has been demonstrated for the first time to have significant therapeutic efficacy in controlling the red cell mass in patients with the myeloproliferative disease polycythemia vera. The starting dose was $3.0 \times 10^6$ U three times a week, subcutaneously (SC). In three patients the dose required was $5.0 \times 10^6$ U five times a week, SC. Side effects were easily tolerated. The striking advantage in the use of this drug is its presumed absence of antileukemic effect. Further evaluation is necessary, but the initial responses are encouraging.

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required one phlebotomy during the first 3 months of rIFNa therapy. Of considerable interest is the fact that the spleen regressed in size in four patients after rIFNa whereas it had remained the same or enlarged slightly during treatment with phlebotomy. In the fifth patient (Patient 2) the spleen remained unchanged in size. This was related to a previous documented portal vein thrombosis.

The side effects of rIFNa were similar to those reported in other studies and were dose-related. These included myalgia, low grade fever, and muscle weakness in three of the five patients. Virtually all symptoms were relieved with acetaminophen in the usual dose. One patient complained of dry skin.

Interval bone marrow determinations 1 year after the institution of rIFNa indicate that the marrows have remained hypercellular with no significant change compared with pretreatment marrows. There has been no change in marrow reticulin or levels of serum erythropoietin.

### COMMENTS

For the first time, these results clearly demonstrate the effectiveness of rIFNa in controlling the excess red cell mass in polycythemia vera. Red cell values were controlled within 6 months, eliminating the need for phlebotomy in all five patients. Furthermore, as previously noted in other myeloproliferative diseases, elevated platelet counts were reduced and spleen size diminished after rIFNa. In all patients, it was possible to subsequently maintain the patient on relatively small doses of drug.

Based on these studies, a reasonable starting dose is 3 to $5 \times 10^6$ units SC, three to five times per week. It is possible that subsequent patients may require more or less interferon, depending upon response. Obviously, further follow-up is required to determine the development, frequency, and type of complications that may occur with long-term use of rIFNa. The occurrence of acute leukemia, myelofibrosis, and cytogenetic abnormalities will be monitored carefully. In the meantime, further evaluation of this drug in a larger number of patients with this disease is certainly warranted.

### ACKNOWLEDGMENT

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### REFERENCES

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[see comments]

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