

# Pentostatin, Cyclophosphamide and Rituximab Is an Active, Well-Tolerated Regimen

## For Patients With Previously Treated Chronic Lymphocytic Leukemia

Nicole Lamanna, Matt Kalaycio, Peter Maslak, Joseph G. Jurcic, Mark Heaney, Renier Brentjens, Andrew D. Zelenetz, Denise Horgan, Alison Gencarelli, Katherine S. Panageas, David A. Scheinberg, and Mark A. Weiss

### Purpose

Purine analogs and alkylators are important agents for treating chronic lymphocytic leukemia (CLL). Early studies combining fludarabine and chlorambucil were abandoned owing to increased toxicity from overlapping myelosuppression and immunosuppression. Of the purine analogs active in CLL, pentostatin appears to be the least myelosuppressive. We previously reported that pentostatin and cyclophosphamide (PC) is active and well-tolerated in patients with relapsed or refractory CLL. Subsequently, we added rituximab, and now report on this three-drug combination.

### Patients and Methods

We treated 46 patients with either previously treated CLL (32 patients) or other low-grade B-cell neoplasms (14 patients). Patients received pentostatin 4 mg/m<sup>2</sup>, cyclophosphamide 600 mg/m<sup>2</sup>, and rituximab 375 mg/m<sup>2</sup> (PCR). All drugs were administered on the same day (rituximab omitted from cycle 1), and patients received six cycles at 3-week intervals. Filgrastim, sulfamethoxazole/trimethoprim, and acyclovir were administered prophylactically.

### Results

The median age was 62 years (range, 30 to 80 years). The median number of prior regimens was two (range, one to seven). For CLL patients, there were 24 responses (75%), including eight complete responses (25%). In fludarabine-refractory patients, 75% responded. Toxicity was acceptable, with grade 3/4 infections (including fever of unknown origin) in 28%. The regimen



was well tolerated, with 72% of patients receiving the planned treatment at full dose.

### Conclusion

PCR is safe and effective in previously treated patients with CLL. In comparison with our prior two-drug regimen, we find

that rituximab did not seem to add significantly to the toxicity, but did appear to confer a survival advantage. Based on these results, we are currently studying PCR as initial therapy for patients with CLL. *J Clin Oncol* 24. ©2006 by American Society of Clinical Oncology