

Table 2. Different Doses of Pamidronate Given According to the Severity of Hypercalcemia

Group	No.	Ca (mg/dL)	Ca (mmol/L)	Dose of pamidronate
I	6	10.4-12.0	2.6-3.0	30 mg
II	8	12.1-14.0	3.1-3.5	45 mg
III	4	> 14.1	> 3.6	60 mg

*Adjusted serum calcium level according to fluctuations of the serum albumin level after rehydration.

the following equation:

$$\text{Corrected calcium (mg/dL)} = \text{measured calcium (mg/dL)} - \text{albumin (g/dL)} + 4$$

Definitions for Assessing Efficacy

Patients whose serum calcium level decreased below 10.4 mg/dL within 8 days after pamidronate were classified as "responders". Patients who had no change in serum calcium level for 8 days, and the level remained the same for additional 8 days were classified as "non-responders". Patients whose serum calcium decreased for a short period within 8 days, but returned to a hypercalcemic level (above 10.4 mg/dL) were classified as "partial responders". "relapse" was defined as calcium levels exceeding 10.4 mg/dL twice within 8 weeks after treatment. The duration of normocalcemia

was recorded by giving pamidronate to patients who relapsed (adjusted serum calcium > 10.4 mg/dL). Non-responders were excluded from the duration of normocalcemia analysis. Those who developed their first relapse within 8 weeks were allowed to undergo pamidronate therapy again, but those who did not respond or who experienced a second relapse were dropped from the study. Differences in mean values before and after pamidronate treatment were analyzed using Wilcoxon signed rank test, where a *p* value < 0.05 indicates statistical significance.

RESULTS

One patient died within 2 days of beginning pamidronate treatment owing to progressive malignancy, and no response was assessed. Of the 17 remaining patients, 14 (82.4%) achieved normocalcemia within 8 days and were defined as "responders". The other 3 patients failed to respond to pamidronate and retained a high serum calcium level for 8 days after therapy; they were defined as "non-responders". There were no "partial responders" in this study. The median time for lowering hypercalcemia to the normal limit was 4 days (range, 2 to 7 days). The median duration of sustaining normocalcemia was 18 days (range, 5 to 199 days). Fig. 1 shows the change in adjusted serum calcium level after pamidronate treatment. Six patients among

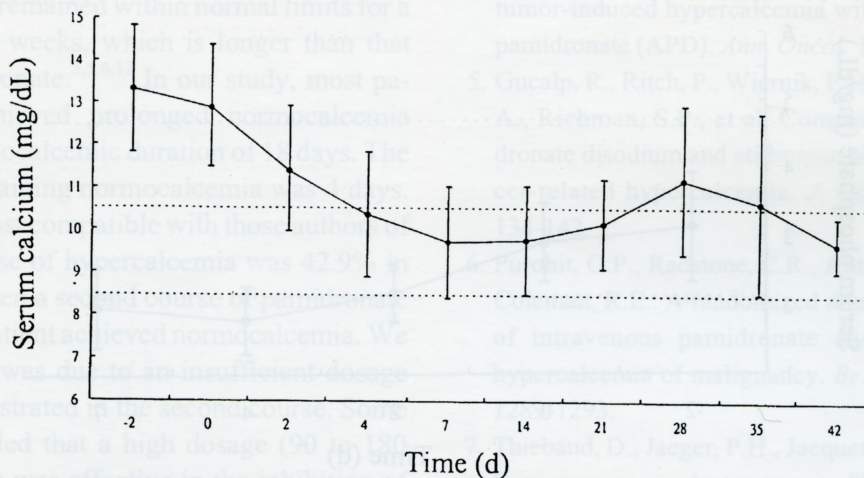


Fig. 1. Serial changes in adjusted serum calcium levels after pamidronate treatment. Points are means; bars are standard deviation; the reference range is indicated by horizontal dotted lines.