
**Abstract**

**BACKGROUND:**
Mouth sores and/or difficulty swallowing are common and painful consequences of cytotoxic chemotherapy for cancer. In previous studies oral glutamine was found to protect animals from the effects of whole abdominal radiation and methotrexate-induced enteritis. Glutamine also was found to reduce oral mucositis in a nonrandomized pilot study in humans. Therefore, the authors attempted to determine the efficacy of oral glutamine in a randomized, double blind, crossover trial in cancer patients receiving chemotherapy.

**METHODS:**
Twenty-four patients (16 children and 8 adults) received glutamine or placebo (glycine) suspension (2 g amino acid/M2/dose twice daily) to swish and swallow on days of chemotherapy administration and for at least 14 additional days. Patients completed a calendar indicating days of mouth pain associated with each chemotherapy course and the effect of mouth pain on oral intake.

**RESULTS:**
Paired data indicated significant amelioration of stomatitis associated with glutamine administration after chemotherapy. The duration of mouth pain was 4.5 days less in chemotherapy courses in which glutamine supplementation was compared with placebo (Wilcoxon's signed rank test, P=0.0005). The severity of oral pain also was reduced significantly when glutamine was provided with chemotherapy (the amount of days mucositis restricted oral intake to soft foods [> or =Grade 2; Modified Eastern Cooperative Oncology Group grading system] was 4 days less with glutamine compared with placebo; Wilcoxon's signed rank test, P=0.002).

**CONCLUSIONS:**
Low dose oral glutamine supplementation during and after chemotherapy significantly reduced both the duration and severity of chemotherapy-associated stomatitis. Oral glutamine appears to be a simple and useful measure to increase the comfort of many patients at high risk of developing mouth sores as a consequence of intensive cancer chemotherapy.