CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY

Name(s)

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Project Number

J0504

Project Title

Antacid Effectiveness and Cost Analysis

Abstract

Objectives/Goals
To determine which of the various is the most effectiveness. To determine the cost-benefit relationship between those antacids.

Methods/Materials
In order to determine the effectiveness of each antacid, I first prepared diluted samples of one dose of each antacid. I used three brands of tablet antacids, and two brands of the liquid antacids. Second, I prepared a simulated gastric juice solution (Sodium Bicarbonate). Third, I added indicator solution to each antacid sample. Fourth, I added the simulated gastric juice drop wise to each sample, and then was able to determine the mill equivalency (mEq) of each antacid. The higher the mEq value, the more effective the antacid is. The next part of my project was to conclude a cost-analysis. I acquired the cost of each antacid at three different retail stores, and then could determine the cost per dose for each antacid. The stores that I acquired the prices from were Longs Drugs, Ralph's, and Wall greens. Lastly, with the mEq value and the cost per dose value, I determined the cost per mill equivalency (mEq).

Results
The most effective antacid brand was Milk-of-Magnesia. The least effective antacid brand was Gaviscon. The most expensive antacid brand was the Gaviscon. The least expensive antacid brand was Tums.

Conclusions/Discussion
In conclusion, liquid antacids are more effective than tablet antacids. Liquid antacids had a higher mEq value than the tablets. Even though tablets are less costly than liquids, the are not as effective. The cost per dose gets higher as the quantity gets lower.

Summary Statement

Determining the effectiveness of various antacids and determining the cost- benefit relationship among those antacid brands.

Help Received

Mr. Susman helped with materials