

Title: COST AWARENESS AS A FACTOR IN DRUG SELECTION

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Introduction

The cost of hospital based medical care has come under close scrutiny during the past year. In many states including our own, revenues from patient charges cannot increase from year to year despite increases in the specific cost of health care delivered.

To study the impact of cost-awareness on clinical practice, we observed anesthetists' decisions in selecting unit dose ampules or multi-dose vials as sources for lidocaine local anesthesia for intravenous catheter placement before and after prices were marked on the drug containers.

Methods

Two months prior to the study, the staff had voted to use single dose 2 ml ampules as the exclusive source of 1% lidocaine for intravenous canula placement on the basis of convenience and patient safety. It was decided that this practice would be re-evaluated after the cost of unit dose versus multi-dose packages had been determined. No clinical anesthesiologist knew a study was to take place.

During the first five day study period, only the usual unit dose ampules (ONE DRUG) were available. During the second five day period (NO PRICE TAGS), multidose vials as well as unit dose ampules were available, side-by-side. No special attention was drawn to this change. The third study period was nine days. During this period (WITH PRICE TAGS), labels stating the cost of a unit-dose of each preparation were applied. These were lidocaine 1% 2ml ampule-"38¢ each" and lidocaine 1% 50 ml vial-"2¢/ml".

At the beginning of each day, a known number of ampules and a new 50 ml vial of lidocaine were delivered to each of two (in-patient and out-patient) pre-operative holding areas. At the end of each day, the number of ampules used was determined. The volume of lidocaine used from the multi-dose vials was determined assuming an initial volume of 52 ml (measured in 3 vials from the same manufacturer). Based upon observations of clinical practice, a typical dose from the multi-dose vials was 1.0 ml. To insure validity of the results, statistics were computed for 0.5, 1.0, and 2.0 ml doses. The Chi-Square test was used to test significance.

Results

Using the Chi-square test the number of

ampules and ml of each drug type used in each period is tabulated in table one. Comparing drug usage when there was ONE DRUG to usage when there were two drugs but WITHOUT PRICE TAGS, $\chi^2 = 51.0$, $p < 10^{-8}$ if 1.0ml/dose is assumed. For 0.5 and 2 ml/dose $p < 10^{-8}$ and $p < 10^{-6}$ respectively. Comparing drug usage WITHOUT and WITH PRICE TAGS, $\chi^2 = 17.0$, $p < .0001$ if 1.0ml/dose is assumed. For 0.5 and 2.0ml/dose $p < 10^{-6}$ and $p < .0001$ respectively.

Discussion

We noted a statistically, clinically, and monetarily significant change in drug selection habits when a second type of drug packaging was made available. We noted further statistically, clinically and monetarily significant changes when a small amount of education was provided by simply putting price tags on different packaging of the same drug. Cost awareness was therefore definitely a factor in drug selection, even though the anesthetists were not specifically trained in such awareness. Maximal cost reduction was certainly not achieved with this minimal educative procedure. If clinicians are to be involved in cost saving measures in our present cost-sensitive environment, they must be educated concerning cost-effective medical care.

| | | # Ampules | #ml From Vial |
|--------------------|------------|-----------|---------------|
| ONE DRUG | (Period 1) | 180 | 0 |
| WITHOUT PRICE TAGS | (Period 2) | 153 | 50 |
| WITH PRICE TAGS | (Period 3) | 215 | 155 |

* $\chi^2 = 51.0$ $p < 10^{-8}$

** $\chi^2 = 17.0$ $p < .0001$

TABLE 1 Number of ampules and number of mls used from vials for each of the three study periods. χ^2 and p values are for 1.0ml/dose. The third period lasted 9 days, rather than 5.

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