LETTERS TO THE EDITOR

DOES DTC ADVERTISING AFFECT THE DRUG MARKET?

To the Editor:

I enjoyed the survey by Bell and colleagues[1] on direct-to-consumer (DTC) pharmaceutical advertising. Although the issues raised about patients' and physicians' attitudes regarding this type of advertising are interesting, I would like to point to some older evidence of market forces that suggests the success of a drug does not rely on these promotional efforts. I believe that a marketing therapeutic equilibrium[2] exists between physicians and drug manufacturers that in the long run allows for the natural success of the most efficacious drugs, independent of advertising expenditures.

Just before 1962, Congress concluded that because of heavy promotion by drug companies and minimal concerns by physicians for controlling cost under the indemnity medical system that was pervasive at that time, drugs of unproved benefit and unnecessarily high expense were being prescribed. Until then, the Food and Drug Administration (FDA) had only required proof of safety, not efficacy; a policy that dates back to the 1938 Food, Drug, and Cosmetic Act.

In a classic study, Peltzman[3] looked at the effects of the passage of the 1962 FDA amendment, when proof of efficacy was added, double-blinded experiments were required, generic names had to be revealed on the labels, and advertised claims had to be approved by the FDA. His hypothesis was that these new rigorous standards would decrease the demand for dubious drugs already on the market and increase the demand for drugs that were introduced after the passage of the amendment.

What Peltzman found was that there was no significant difference between market shares and prices for drugs introduced before and after the 1962 amendment. Demand for pharmaceuticals was fairly inelastic to the effects of government regulation. He concluded that physicians' abilitity to distinguish efficacy among drug choices was the primary driving force behind a drug's success or failure. Advertising expenditure has not been shown to predict long-term success of a prescribed drug.[4]

I can only imagine 2 modern market forces that have the potential to upset this natural balance. First, the restrictions imparted by negotiated managed care formularies may become too focused on the cost of a unit dose instead of the total costs of treatments and outcomes. And second, the physician's prescription pad could be taken out of the loop of pharmaceutical treatment. This concept is not as far-fetched as it may sound, given some of the current trends in population-based disease management.

Perhaps the billions of dollars now being spent on drug advertisements are enough to temporarily skew this therapeutic marketing equilibrium. However, I still believe that once the hype is separated from clinical experience, the best drugs will endure, while the pretenders will fall by the wayside.

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AEROSOL-INDUCED FROSTBITE INJURY

To the Editor:

Aerosol spray cans are common in American households and frostbite is a potential complication of aerosol usage. This case report is the first to describe frostbite when an aerosol spray was used for its intended purpose.

A 42-year-old man was using Elmer's Spray Adhesive according to the spray can's instructions to assist his daughter with her science project. While spraying, his right index finger slipped forward on the actuator (spray head button), directly exposing the fingertip to the spray. The man felt a stinging sensation and repositioned his finger. As he continued to spray, his finger again slipped forward. A few minutes later, he noticed a continuous stinging pain and discovered a 3-mm diameter area of blanched skin with a hyperemic halo on the fat pad of the fingertip. During the next week, the area of injury blistered and sloughed, identical to second-degree frostbite. The finger eventually healed with residual minor increased cold sensitivity.

Unlike literature reports of aerosol injuries, this case occurred during routine use of an aerosol for its designated purpose. Previous reports have included frostbite of the mouth and face of a patient who attempted to inhale a propane propellant to achieve euphoria[1] and frostbite to the forearm of a child who had sprayed his arm with air freshener "for fun."[2] The cause of the frostbite is reported to be the propellant in the aerosol, not the active ingredient.

The propellant in Elmer's Spray Adhesive is dimethyl ether, a com-

mon agent in aerosols of many types. The spray can has a standard actuator that is 10-mm in diameter, similar to the actuators on numerous brands of spray paint and hair spray. Many of these aerosols are designed for prolonged continuous use.

An aerosol-caused frostbite involves a complex relationship between container variables (can pressure, valve-flow rate, actuator dispersion pattern, and droplet size) and formulation variables (Joule-Thompson coefficient of the propellant; heat of vaporization of the liquid ingredients; ratio of mixtures of propellants, solvents, and active ingredients; and changes in ingredient ratio as the can empties). Engineering specifications focus on the interplay of these variables to produce desired spray characteristics, not on risk to consumers from inadvertent exposure.[3]

The following would minimize the potential for consumer injury:

1. Increase awareness regarding the potential for household aerosols to cause frostbite. This may require updated warning labels.
2. Change actuator designs to enhance safety. Alternative actuator designs would enlarge them or include a protective barrier to make exposure of the spray finger to the propellant less likely.
3. Include frostbite risk as a consideration in the development of future aerosols for consumer use.

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