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Antibacterial products: myth or reality?

The media plays a pivotal role in creating public awareness about every aspect of life, including healthcare. This has revolutionised the lifestyles of even those who are not literate. The other side of the story is, however, not so bright. Advertising campaigns of personal hygiene products like soap is one example. The promotion of antibacterial products as being a guard against diseases like diarrhoea is actually misleading.

The escalating load of diseases has created concerns in the general population about preventive measures. Manufacturers have been thrusting antibacterial agents into soaps and other personal hygiene products for several decades but their use has markedly increased in the last eight to ten years (1).

The main purpose of this article is to highlight certain realities in this regard. The involvement of doctors in the publicity campaigns of these products is another area of concern. Most physicians do not know that they are being used to sell the products. But if they do know and they are deliberately associating themselves with the campaign for financial benefits, it is highly unethical and cannot be justified in any way.

The antibacterial agents in these products, particularly soaps, include chemical substances like chloroxylenol, hexachlorophene, triclocarbon and, most commonly, triclosan. Triclosan is a non-agricultural pesticide used in soaps, toothpastes and lotions. It is derived from chlorophenols which are suspected carcinogens (2). Side effects of triclosan include skin irritation and increasing susceptibility to allergies (3). Chlorophenols are chemically related to dioxin, which is a chemical compound that is formed through combustion and chlorine bleaching (4). It is carcinogenic, deteriorates immune systems, leads to reproductive malfunction and damages aquatic environment (3).

Triclocarbon agents used in these products has been found to be bacteriostatic and are only effective against some gram positive bacteria but has no effect on gram negative bacteria, viruses and parasites that cause infectious diarrhoea (5,6).

Third world countries are being considered a productive market for the promotion of antibacterial products because a majority of the population is illiterate, and the electronic media is accessible to all and has great influence on common people. In addition to these factors, the burden of diseases like respiratory tract infections and diarrhoea is high due to unhygienic living and environmental pollution (7).

Cosmetic and pharmaceutical companies are taking advantage of this situation. They are manipulating the public psyche and are putting forth false claims of providing protective shields against the above-mentioned diseases. The objective of such companies is to capture all age groups. To achieve this

purpose the advertisements are smartly targeting the impressionable young by using macho figures as well as comic characters to sell the products for diverse product appeal.

Plain soap, without antibacterial agents, is a simple and effective way of removing dirt and bacteria. On the molecular level, it binds with water on one side and grease and dirt on the other side, thereby rinsing away unsafe elements and providing adequate hygiene (8). The antibacterial soap gives no additional benefit. Various studies conducted all over the world have proven this fact (9, 10).

Attention should instead be focused on educating people about proper hand-washing practices rather than diverting their attention to fancy, expensive soaps that are labelled "antibacterial". Good hand-washing technique involves scrubbing hands with warm running water and any soap for about 15-20 seconds (11).

The UN General Assembly pronounced 2008 to be the International Year of Sanitation in order to deal with this global crisis which is a noticeable initiative to educate the masses. As an extension to this agenda, October 15 was declared as World Hand-washing Day which was supported by the Global Public-Private Partnership for Hand-washing with Soap (12).

The inclusion of companies manufacturing antibacterial soaps in this partnership means that the message "proper hand-washing" will be interpreted as "proper hand-washing with antibacterial soaps". Although the intention was good, the idea got hijacked by these companies and a distorted message was conveyed to the public. Instead of motivating people towards proper hygienic techniques, this campaign turned out to be a publicity stunt for antibacterial products.

The media, medical associations and doctors should focus on educating the masses rather than supporting the false claims regarding antibacterial soaps. Existing public health programmes should integrate proper hand-washing education in order to reduce the prevalence of life-threatening diseases. This approach would be more sensible and useful to society in terms of appropriately utilising public health resources.

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References

1. Ngo Ky. Antibacterial soap: unnecessary and harmful. Environmental Products for Important Causes [Internet]. 2005 Oct [cited 2008 Sep 22]. Available from: <http://www.products4causes.com/pdf/Triclosan.pdf>
2. Aviva G. Triclosan the ubiquitous antibacterial agent. Arts and Opinion [Internet] 2007 [cited 2008 Sep 23];6(6) Available from: http://www.artsandopinion.com/2007_v6_n6/glaser-triclosan.htm
3. Triclosan. [Internet] 2005 [cited 2008 Sep 17]. Available from: <http://www.grinningplanet.com/2005/10-04/triclosan-article.htm>
4. Polychlorinated dibenzodioxins [Internet] 2008 [cited 2008 Sep 23]. Available from: <http://en.wikipedia.org/wiki/Dioxin>
5. Heinze JE, Yackovich F. Washing with contaminated bar soap is unlikely to transfer bacteria. *Epidemiol Infect.* 1988 Aug; 101(1):135-42.

6. Walsh SE, Maillard JY, Russell AD, Catrenich CE, Charbonneau DL, Bartolo RG. Activity and mechanisms of action of selected biocidal agents on gram-positive and gram-negative bacteria. *J Appl Microbiol.* 2003; 94(2):240-7.
7. Ramzan A, Moorani K N, Shahid A. Assessment of nutritional status in children attending basic health unit of ShidiGoth. *Pak J Med Res.* 2008 ; 47: 40-3.
8. Shapely D. FDA calls bluff on antibacterial soap [Internet] 2007 [cited 2008 Sep 22]. Available from: <http://www.thedailygreen.com>
9. Faoagali J, Fong J, George N, Mahoney P, O'Rourke V. Comparison of the immediate, residual, and cumulative antibacterial effects of Novaderm R, Novascrub R, Betadine Surgical Scrub, Hibiclens, and liquid soap. *Amer J Infect Control.* 1995 Dec;23(6):337-43.
10. Koecher K, Krenke D. A comparative study of the immediate effects of a triclosan antibacterial, chlorxylenol antibacterial and lotion soap [Internet]. 2000 [cited 2008 Sep 22]. murphylibrary.uwlax.edu/digital/jur/2000/koecher-krenke.pdf
11. Mayo Clinic Staff. Hand washing: an easy way to prevent infection. [Internet] 2007. [cited 2008 Sep]. Available from: <http://www.mayoclinic.com/health/hand-washing/HQ00407>
12. Global handwashing day, October 15. [Internet] 2008 [cited 2008 Oct 1]. Available from: <http://www.globalhandwashingday.org>