flashback

Inquiry on controlled drugs in consumer products

From the BRUNSWICKAN
September 8, 1972

In 1941, Givaudan Corporation, a Swiss company patented a chemical compound called hexachlorophene intended to solve the problem of skin disinfection. The years following World War II saw a general and widespread use of this chemical for a multitude of purposes.

Over the years, the toxic properties of the chemical became known through "accidents". The medical profession, ecstatic about the use of hexachlorophene began to use it in soap form for surgeons and in 3 percent solution for use in skin disinfection in hospitals. When first introduced, the chemical was recommended for use in burn therapy. Several years later, an observant physician noted that a surprising number of burn patients were manifesting such symptoms as stupor, coma, confusion, muscular twitching, convulsions, and other effects of cerebral nervous system poisoning.

Many hospitals continue to bathe newborn infants with 3 percent hexachlorophene soaps. Infants poisoned by improper use of hexachlorophene have shown symptoms of central nervous system injury and onr case showed signs of swelling of the brain. The swelling disappeared after removal of hexachlorophene.

When Givaudan Corporation's patent expired, a number of other companies began to produce hexachlorophene. The number of suppliers of the chemical rose and the number of products has become legion. Many of the products contain the chemical for no useful purpose. For example, in addition to soaps, hexachlorophen is also used in shoe liners, underarm deodorants, shaving cream, mascara, after shave lotions, skin fresheners, astringent creams, lotions hand creams, cold creams, freckle lotion, face powder, dusting powder, baby powder, depilatory powder, perspiration foot powder, baby scalp oil, hair dressing, permanent wave solution, dandruff tonic, detergent sanitizers, pine oil disinfectants, furnace filters, and many more whose composition is known only to the manufacturer.

CONSUMER PRODUCTS

The number of consumer products containing hexachlorophene increased day by day. Any one of the consumer products are likely not harmful, but combinations of them will result in so much skin absorption that hexachlorophene levels in a consumer's blood may approach those of brain dammaged animals. Present evidence indicates that hexachlorophene intoxication is a reversible disease - that is, it will correct itself if the cause is removed.

Many products do not list hexachlorophene on the label. As long as a manufacturer does not make a medical claim about his prduct, he is not required by law to list the contents. Surprisingly, there is a very high content of hexachlorophene in feminine hygiene sprays, some as high as 90 percent of the non-volatile contents. The following is a partial list of products containing hexachlorophene as of February 1972 showing the percent content of hexachlorophene in those cases where the manufacturer claimed it on the label.

RESEARCH

Eventually hexachlorophene manufacturers branched into the agricultural market. Hexachlorophene was made available as a fungicide and pesticide in the U.S.A. Ironically, the Food and Drug Administration (F.D.A.) investigated the toxicity of hexachlorophene for the first time only when manufacturers applied for a pesticide food residue tolerance.

The "Status Report on the Toxicity of Hexachlorophene" was presented for internal circulation within the F.D.A. on May 28, 1970. A review of the scientific literature mentions the cases of accidental poisonings, burn encephalopathy and central nervous systems poisonings. As well, Kimbrough reported that there is a skin disease known as "Chloasma" which is apparently associated with contact with hexachlorophene. She also reported cases of scrotal irritation resulting from application of hexachlorophene. More significantly, the Report contains the results of experiments done by Dr. Renate D. Kimbrough, and by Dr. R.J. Feldman and Dr. H.I. Maibach.

Kimbrough's chronic toxicity studies with rats fed sublethal doses of hexachlorophene daily for weeks or months revealed that they developed a "weakness" in their hindquarters that progressed to paralysis and that they exhibited signs of nervousness. Autopsy of rats fed 500ppm hexachlorophene revealed that the brains were very soft in consistency and had occasional small holes. Animals fed much lower doses of the chemical also demonstrated this "spongy degeneration of the white matter". The spongy degeneration of white matter seems to explain the curious display of central nervous system involvement in humans poisoned with hexachlorophene.

Feldman and Maibach investigated absorption of various chemical compounds through the healthy human skin. They found that hexachlorophene was absorbed at a relatively constant rate, and when a dose of radioactive hexachlorophene was applied to the surface of the forearm of a volunteer, 3 percent of the applied dose was absorbed. Therfore, for 30 years, people's circulatory systems have been subjected to insult by the absorption of a substance never intended for inclusion in the circulatory system by either man or nature.

On August 14, 1971, two F.D.A. scientists, Robert E. Hawk and August Curly produced another report with the results of their research into hexachlorophene. This paper contained some alarming information. Firstly, exposure to hexachlorophene in the diet resulted in a linear relationship - the more hexachlorophene to which an individual is exposed, the higher the levels of it found in his blood. Secondly, people who were exposed to very low amounts of hexachlorophene in consumer products had significant amounts circulating in their blood streams, apparently derived through skin absorption. Thirdly, brain lesions were detected in animals which received one tenth the dose reported by Kimbrough.

Hexachlorophene is made from a compound called 2,4,5-T, a herbicide that has been used to defoliate much of Southeast Asia and which caused birth defects at astonishingly small doses. Compounds, called chlorodoxins, are contained in 2,4,5-T, and some of these are among the most toxic substances known, causing birth defects at infinitesimally small doses. There is a good possibility that these dangerous dioxin contaminants of 2,4,5-T could end up in the finished hexachlorophene product. Preliminary results of Dr. Jackie Verret's research indicated that there might be some cause for worry in hexachlorophene as a cause of birth defects. When she was unable to continue her research, hexachlorophene manufacturers under took to determine if there was chlorodoxin impurities in hexachlorophene. So far they have been unable to discover any compounds that might cause birth defects.

Government Stand

Information on the Canadian position on hexachlorophene was obtained in an interview on march 24, 1972 with Dr. R.W. Campbell, Assistant Programme Director of the Drug Advisory Bureau at the Department of Health and Welfare in Ottawa. According to Dr. Campbell, the Department of Health and Welfare will recommend to the House of Commons on May 15, 1972, that all products containing more than 0.75 percent hexachlorophene be added to Part Iof Schedule F of the Food and Drug Act. This means that they will be available by prescription only.

When questioned about the fate of those products containing less than 0.75 percent hexachlorophene, Dr. Campbell said that "negotiations with manufacturers have indicated that most of them will take hexachlorophene out of their products completely." Those who do not do so will have to submit evidence based on their own research to the Food and Drug Directorate (F.D.D.) proving two things: firstly, that the product is not harmful to humans; and secondly, that hexachlorophene is an essential ingredient of the product - that is, it is included for a definite purpose.

Apparently, the FDD itself does little research on specific products. Manufacturers carry out research on their own products and submit the results to the FDD for review.Hexachlorophene manufacturers have been submitting their recent research to the FDD, but Dr. Campbell has been unwilling to release the results, saying that the studies had not been reviewed sufficiently yet.

In Canada there exists a procedure called "drug notification", whereby any manufacturer making a medical claim about his product must submit a list of the drug's ingredients to the FDD. Therefore, if a particular chemical component becomes suspect, as is the caes with hexachlorophene, a list of those drugs containing it is immediately at hand.

A cosmetic, as opposed to a drug, is considered to be a product that makes no medical claim as to its effects on the user. In the field of cosmetics, no such system of notification exists. It is possible for a cosmetic manufacturer to keep his formula secret. According to Dr. Campbell, the FDD may require a chemical manufacturer to submit a list of all his customers for a particular chemical; therefore, theoretically all cosmetic manufacturers using hexachlorophene in their products will be known to the FDD. This of course presumes the honesty of the chemical manufacturer. And, in fact, seems a rather roundabout way to get information. Why not require cosmetic manufacturers to submit a list of their ingredients to the FDD? Granted the lists would be long considering the number of varieties of cosmetics on the market, but when the consumers health is at stake, it seems reasonable to demand more government surveillance of cosmetic manufacturers, in the form of notification.

Dr. Campbell stated that the proposed legislation on hexachlorophene levels "should be passed on May 15, 1972 without any problem." If this proves true, we can look forward to a tremendous reduction in the amount of hexachlorophene on the market. Those products containing more than .75 percent hexachlorophene will be available only by prescription. Hopefully most manufacturers of products containing less than .75 percent hexachlorophene will remove the chemical also in the public interest.

(From the Canadian Environmental News Service)

The Brunswickan welcomes any suggestions from students, faculty, or alumni for Flashback ideas.