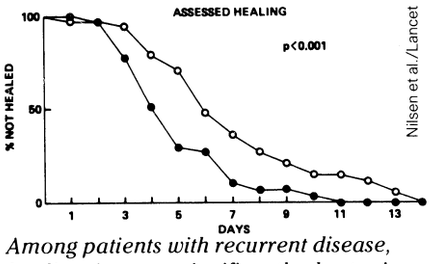
Acyclovir counters recurrent herpes

Last spring acyclovir ointment (trade name Zovirax Ointment 5%) was approved by the Food and Drug Administration to treat initial infections of genital herpes, America's number one venereal disease and the bane of 20 million Americans (SN: 4/10/82, p. 247). Until then, there had been no proven effective treatment for genital herpes infections. Now evidence that acyclovir taken orally can counter recurrent flareups of genital herpes is reported in the Sept. 11 LANCET by Scandinavian scientists.

This is the first published report of acyclovir being effective against recurrent genital herpes, says Ronald E. Keeney, medical adviser in the Department of Clinical Investigation at Burroughs Wellcome Co., the manufacturer of acyclovir. It is important, he says, because genital herpes victims can suffer flareups in infection on and off for years. Such flareups have been especially difficult to treat because viruses retreat into nerve cells in between attacks.

Arvid E. Nilsen of the University Hospital of Bergen, Norway, and colleagues assessed the effectiveness of orally administered acyclovir not just against repeated genital herpes but against initial genital herpes to get an idea of how the drug compares in its effectiveness. Seventeen patients with first-attack disease received two 100-milligram capsules of acyclovir five times a day for five days, while 14 patients with initial disease got a matching placebo. Forty-two patients with intermittent disease got two 100-milligram capsules of acyclovir five times a day for five days, while 43 patients with intermittent disease got a matching placebo. Assessment of the patients' disease was made when they entered the study and three times a week until their sores healed. At each patient visit, symptoms and signs of disease were scored subjectively, and viral specimens were sent to a laboratory for analysis. Then the duration of virus shedding (the length of time that live herpes viruses were present in sores and able to be transferred from person to person through sexual contact), new sore formations and sore healing time were assessed for all four categories of patients and compared statistically.

Both in patients with initial disease and in patients with recurrent disease, the duration of virus shedding was much shorter in those getting acyclovir than in those getting a placebo. Both in patients with initial disease and in patients with recurrent disease, there was significantly less new sore formation in those getting acyclovir than in those getting a placebo. Sore healing time was significantly shorter in those getting acyclovir than in those getting a placebo among patients with initial disease; similar results were found among patients with recurrent disease. Acyclovir is effective against both initial and recurrent genital herpes, the researchers conclude. In fact, in patients with very frequent or easily predictable recurrences, they write, "prophylaxis might be the most feasible way of achieving maximum benefit."



Among patients with recurrent disease, healing time was significantly shorter in those getting acyclovir than in those getting a placebo.

Other soon-to-be published clinical evidence that oral acyclovir can counter repeat genital herpes has been obtained by Ray Dolin of the University of Rochester School of Medicine and colleagues at six medical centers in the United States and Canada. Says Keeney: "We've submitted those data to the FDA" in hopes of getting acyclovir approved for treating recurrent genital herpes infections.

Acyclovir was discovered in 1974 by Howard Schaeffer and Lilia Beauchamp of Burroughs Wellcome. Subsequent discoveries showed that it killed herpes viruses but spared healthy cells, that healthy cells take up much less of it than herpes-infected cells do, and that acyclovir interferes with the herpes virus's DNA polymerase enzyme much more than it interferes with cells' DNA polymerase enzyme, thus inhibiting viral DNA replication but not healthy cells' DNA replication.

—J.A. Treichel

'Light' cigarettes: Deadly as ever

The massive switch from high- to low-tar and nicotine cigarettes has done nothing to reduce the incidence of lung cancer among smokers, according to a recent study by the National Academy of Sciences. In fact, the report indicates that the 20-year trend toward presumably safer cigarettes has been accompanied by a "substantial and unexpected increase" in lung cancer among older smokers, perhaps because habituated smokers unconsciously alter their behavior to maintain the level of nicotine to which they are accustomed.

The study, which was directed by University of Rochester pharmacologist Louis C. Lasagna, concludes that only outright quitting can guarantee any health benefits to smokers. Combining existing data on lifetime cigarette consumption and death rates due to cancer of the respiratory system, the NAS panel found that men over 35 died more often, pack for pack, in 1975 than in 1955 (comparable data were not available for women). During the same time, the average tar and nicotine in cigarettes dropped by half. The report offers two "plausible" explanations for these findings. It may be that even the recent lung cancer deaths are a consequence of the protracted process of carcinogenesis —a process that actually began with early exposure to high levels of tar and nicotine. Or, the report suggests, it may be that low-tar, low-nicotine cigarettes are actually more hazardous, especially for people who are accustomed to a more potent cigarette.

If the newer brands of cigarettes do indeed contribute to more deaths, it is probably—at least in part—because of the way people smoke them, the report suggests. Laboratory measurements of tar and nicotine are made by a smoking machine that is incapable of simulating complex human smoking behavior (SN: 10/4/80, p. 217); if smokers light up more often, take more puffs from each cigarette, or inhale more deeply when they switch brands, the report says, then the laboratory results will not have much value in predicting human consequences. And most research indicates that smokers do tend to "compensate"—though incompletely—for the decreased potency of their cigarettes, the report says.

The NAS panel's conclusion is different from that of Lawrence Garfinkle, who in the 1960s studied the health effects of filtered and unfiltered cigarettes for the American Cancer Society. Garfinkle found that, when he controlled for the number of cigarettes smoked, filtered cigarettes were safer; he also found that people did not compensate significantly by smoking more. But the cigarettes he studied were very different from the "light" cigarettes of today, Garfinkle told SCIENCE NEWS; it is quite possible that people alter their smoking behavior when they switch to these brands, he says.

Garfinkle emphasizes, however, that although there may be some behavioral compensation, there is no evidence that smokers compensate fully—that they will smoke twice as many cigarettes when tar and nicotine are cut in half. If the newer brands are more hazardous, the explanation must go beyond human behavior; the explanation may, according to the NAS report, involve the thousands of chemicals contained in cigarettes that — unlike tar and nicotine—are not routinely measured in government laboratories. Research indicates, for example, that reducing the tar and nicotine in cigarettes does not necessarily reduce the exposure to carbon monoxide and other gases—and may actually increase such exposure. In addition, the report notes, "flavorings" in cigarettes are protected as trade secrets, and the toxicity of such additives is therefore unknown.

—W. Herbert