

'Rx'ing: Pharmacists give it a try

Pharmacists can outperform physicians in appropriately prescribing certain drugs, a study reported in the September AMERICAN JOURNAL OF HOSPITAL PHARMACY suggests.

Glen L. Stimmel, associate professor of clinical pharmacy, psychiatry and behavioral sciences at the University of Southern California School of Pharmacy in Los Angeles, and co-workers attempted to see whether three pharmacists could prescribe drugs for psychiatric inpatients as well as two psychiatrists could. The patients had already had their mental problems diagnosed. It was then up to the pharmacists and psychiatrists to prescribe the appropriate antidepressant, neuroleptic or anticholinergic drug for them from some 20 drugs in each of the three drug classes. Four judges individually evaluated each prescription for its appropriateness. When scores for all three drug classes were combined, pharmacists were found to have prescribed even more appropriately than the psychiatrists had.

Pharmacists can provide physicians with more help in drug prescribing than they are now doing, the researchers conclude.

Self-help for MS patients

Although an effective treatment for the degenerative nerve disease multiple sclerosis remains to be found (SN: 1/30/82, p.86), MS patients might be able to ease their disease by avoiding hot weather and by eating a diet rich in polyunsaturated fats, two new studies, one published and one unpublished, suggest.

Virginia A. Clark and colleagues at the University of California School of Public Health at Los Angeles surveyed some 700 MS patients to see whether they could pinpoint any host or environmental factors that might influence the course of the disease. One of the environmental factors they found to be influential was hot weather: It aggravated symptoms in many of the MS patients and especially in those with severe disease. This finding, the researchers write in the Aug. 20 JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, suggests that "most patients with MS should avoid exposure to heat."

Evidence that a diet rich in polyunsaturated fats can mitigate multiple sclerosis first came from studies of animals with a disease similar to multiple sclerosis. A two-year, uncontrolled clinical trial with MS patients substantiated the evidence. And now Virginia Utermohlen, a nutrition scientist at Cornell University in Ithaca, N.Y., and co-workers have conducted a short-term, double-blind, crossover trial on 20 MS patients. Each patient ate daily doses of safflower oil (high in polyunsaturates) for five weeks and daily doses of olive oil (low in polyunsaturates) for five weeks. The diet rich in polyunsaturates appeared to help some, but not all of the patients, Utermohlen told SCIENCE NEWS.

Now interferon thwarts warts

The antiviral agent interferon, which has already shown effectiveness against cancer, colds and some other diseases, now also appears to be effective against warts, George J. Pazin of the University of Pittsburgh School of Medicine and co-workers report in the latest (Vol. II, No. 2) JOURNAL OF INTERFERON RESEARCH.

They injected leukocyte interferon (one of the several major kinds of interferon) into some warts on a patient's feet and a placebo substance into other warts on his feet. The warts that had been injected with interferon progressively disappeared while those that had been injected with a placebo did not.

As Pazin explained in an interview, he does not foresee interferon becoming a routine treatment for warts because they often disappear spontaneously or can often be effectively treated with acid or liquid nitrogen. But he does anticipate interferon being used to treat patients with exceptionally severe warts.

DSDP: Surprises in the Japan Margin

The scientists aboard the *Glomar Challenger* on Leg 87 of the Deep Sea Drilling Project had their hopes up high when they departed Yokohama, Japan in June. Drilling cores obtained from the Japan Margin were sure to elucidate the complex processes that occur as one crustal plate is subducted beneath another in the tectonically active region. "We failed to accomplish some of the more elevated objectives of the trip," laments Daniel Karig of Cornell University, who was co-chief scientist along with Hideo Kagami of the University of Tokyo.

The first segment of the voyage — to the Nankai Trough off southwest Japan — was designed to explore the mechanical and physical properties of sediments before and after subduction. But drilling into the soft sediments was thwarted by a cracked part in the derrick, necessitating a port call. After returning to the site, the *Challenger* managed to penetrate an additional 20 meters when a typhoon — the first in the area in years — hit the beleaguered ship. The portion of core that was obtained proffered an impressive number of surprises, considering its brevity. First, Karig explains, the researchers expected to find a large amount of water expelled from the sediments during the initial phases of deformation. That was not observed; the amount of water between pores in the deformed sediment was no less than that in the equivalent undeformed sediment recovered from a second drill hole on the trench floor. Second, the sediments were moving in a massive, shingle-like sheet, about one kilometer thick and five km wide. The soft muds behaved mechanically like hard rock, similar to the thrust faults in Wyoming, Karig says. Surprisingly, there was little sign of the deformation, such as folding, that would be expected as soft sediments are sliced from the top of the subducting plate. Finally, he says, the site diverges from the conventional model that assumes that in an area of intense seismicity, the rate of subduction is rapid. "As far as we can tell from drilling and reflection profiles, it's only about 2 centimeters [per year]," Karig says.

When the typhoon subsided, the *Challenger* steamed toward the second research site, the Japan Trench off Honshu. The site had been drilled before, during DSDP Legs 56 and 57. Leg 87 was intended to explore further some questions raised concerning the history of the vertical movements on the Japan Slope and of an ancient land mass thought to have been above sea level as recently as 20 million years ago. First, all evidence of the old land mass was elusive, Karig reports. Fossils of foraminifera — tiny marine animals with shells mostly of calcite — should have indicated shallower ocean depths as the drill penetrated deeper into the sediments. This did not happen. At the base of the mid-Miocene period (about 13 million years ago) sediments should have indicated very shallow water, but it was just as deep as ever. Then at 950 meters deep, the drill hole "caved in" as pieces of the highly fractured sediments crumbled, bringing drilling to a halt. The *Challenger* was moved to two nearby sites in an attempt to reach the ancient land mass, but the holes met the same fate, caving in at depths of 900 meters and 940 meters. Karig describes one incredulous researcher who likened their unrelenting misfortune to a James Bond thriller: "Once it's happenstance, twice it's circumstance, three times... enemy action!"

The section of core that was extracted is too short to describe the area's confusing record of subsidence and extension, or stretching. Seismic reflection profiles had shown a relatively flat bed of sediments with slopes, or dips, of less than 10°. The core, however, reveals dips of up to 70°, shot through with small faults and dewatering veins. The impression of flatness is similar to that of a row of dominoes — the whole line is horizontal, but when it is knocked down, each domino has a dip. Information about the total dip of the sediments and of the dip of the fault plane could indicate how much extension has occurred.