# Low-Dose Advantage for Schizophrenics

In the two years following release from a psychiatric hospital, most schizophrenics tend to benefit more by taking about one-fifth the standard dose of a commonly prescribed antipsychotic drug, according to a report in the September ARCHIVES OF GENERAL PSYCHIATRY. These "minimal doses" are equally effective for those living with family members who display a behavior style considered by some researchers to be a prime cause of schizophrenia.

"Our results suggest a great proportion of the hundreds of thousands of schizophrenics being successfully treated in the community can get by with much less medication without increasing their chances of being rehospitalized," says social worker and study director Gerard E. Hogarty of the University of Pittsburgh School of Medicine.

Minimal doses, Hogarty adds, also caused fewer of the side effects associated with antipsychotic drugs. A severe movement disorder known as tardive dyskinesia occurs in a substantial minority of patients receiving standard doses (SN: 7/20/85, p.45).

"What is needed to implement a program of minimal effective [drug] dosing is, essentially, a change of attitude [by clinicians] and a willingness to monitor patients more closely," Hogarty asserts.

For each of 70 schizophrenic patients monitored after discharge from a university-based psychiatric hospital, Hogarty and his colleagues established whether their families were high or low in "expressed emotion." This measure, determined through interviews with all adult family members, assesses criticism and hostility aimed at the schizophrenic individual, as well as emotional overinvolvement in the schizophrenic's life.

Schizophrenia usually involves delusions, hallucinations, incoherent thinking, apathy or inappropriate emotions and the inability to maintain a job or social relations.

Several studies in England and the United States have shown a worsening of symptoms and more rehospitalizations among schizophrenics released to families high in expressed emotion. Other studies have led some researchers to question this link, and advocacy groups for families of the mentally ill have roundly criticized emotional expression research as an attempt to blame families for what the organizations consider a biological brain disease.

The Pittsburgh researchers found no difference in the recurrence of severe schizophrenic symptoms and overall adjustment when they compared subjects in families with high and low emotional expression. In addition, subjects randomly assigned to 5 milligrams of injectable fluphenazine decanoate every two weeks do as well overall as those given the standard 25-mg dose, regardless of their family levels of expressed emotion.

Low-dose subjects had more minor flare-ups of schizophrenic symptoms, but close monitoring by clinicians and temporary boosts in medication to no more than 10 mg of fluphenazine stabilized their condition. Nevertheless, the low-dose patients worked more hours at outside jobs, related better to family members and were less apathetic than standard-dose recipients.

A number of factors, including living with a family high in expressed emotion, can provoke a return of symptoms, Hogarty says. But these are risks for schizophrenia worsening, not causes of the disorder, he notes. In the Pittsburgh sample, young, unmarried men living at home after release from the hospital appeared to be most sensitive to family criticism and hostility.

A study in the same issue complements the findings of the Pittsburgh researchers. Gordon Parker and his colleagues at the University of New South Wales in Sydney, Australia, followed 57 schizophrenics for nine months after their release from a hospital. Patients who returned to families high in expressed emotion were not more likely to suffer a renewed bout of severe symptoms or end up back in the hospital.

Expressed emotion may in some cases be a family style elicited by the difficult task of dealing with a schizophrenic whose prognosis is poor, the researchers suggest. — *B. Bower*

## Focusing on Gilbert's extra eye

As Caribbean and Mexican residents sort through the wreckage of their encounters with hurricane Gilbert, meteorologists sift through piles of data from satellites and from airplanes that flew through the storm. Aside from its notoriety as one of the stronger hurricanes on the books, Gilbert interests scientists because a phenomenon appeared within it that may offer a forecasting tool. The storm developed an outer band of clouds surrounding the central eye-wall — forming an unusual feature that on satellite images resembled a bull's-eye pattern.

This circular outer wall of clouds formed at about a 70-mile radius from the storm center on Tuesday, Sept. 13, says Hugh Willoughby of the Hurricane Research Division of the National Oceanic and Atmospheric Administration in Miami. The outer band was concentric around the normal eye-wall, an inner ring of clouds that measured less than 15 miles in diameter on that day. The eye of a hurricane is a calm, cloud-free area encircled by a wall of clouds and the storm's fiercest winds.

Outside the eye-wall, winds usually grow weaker with distance from the center and clouds are organized into a spiral that rotates like a pinwheel. But 12 hours before the storm passed over Mexico's Yucatán Peninsula, the clouds of Gilbert's innermost spiral pulled together, shaping themselves into a circular band. The wind speed in this outer ring rose to about half that of the true eye-wall, so that planes flying into the storm had to pass through two walls to get to the eye, Willoughby says.

Double eye-walls have developed in many very intense hurricanes, including Allen in 1980, but scientists remain uncertain why or how commonly the pattern forms. In Allen, the outside ring of clouds migrated inward and replaced the decaying inner eye-wall. The storm weakened during this day-long replacement period, then reintensified. Willoughby and his colleagues have proposed that the migration process occurs in many strong hurricanes, suggesting forecasters could use this pattern to help judge whether a storm will weaken or strengthen.

According to Willoughby, Gilbert's outer wall also began to migrate inward, but the process was interrupted slightly by the storm's pass over the Yucatán. Although Gilbert did not definitively confirm the migrating eye-wall theory, Willoughby says, "I think we made some converts last week."

Robert Sheets, director of the National Hurricane Center in Coral Gables, Fla., isn't one. "I still haven't seen it documented whether or not there is a transition from an outer eye that becomes the inner eye," he says.

Meteorologists were surprised not just by Gilbert's second eye-wall but also by the narrowness of the eye itself. Hurricane eyes usually measure about 25 miles in diameter, but at times Gilbert's spanned little more than 9 miles. Its central pressure of 885 millibars (26.13 inches of mercury) was the lowest on record for the Western Hemisphere. — *R. Monastersky*