three years ago, when he became symptomatic for the first time. Closer investigation revealed that more than half the family possesses the 'gift of tongues'.

Miss B's family shared similar beliefs in the occult, and thus she did not realise the intrapsychic nature of her problem. One may speculate that the exacerbation of a shared paranoid psychosis, which started ten months previously, served the purpose of bringing the two partners to medical attention. It may not be too far fetched to suggest that the onset of their shared psychosis itself announced the need for their geographical movement away from the alien culture towards the culture to which they belonged. As long as their delusions fell within the realm of possibility, which in turn was determined by their own culture, the problem was not appreciated as an illness; however, when they crossed the cultural limits of plausibility (e.g. feeling that the neighbours were Jews in disguise), the families became alarmed.

In a country like India, where there is a rich, strong, religio-cultural milieu, such psychoses with religious themes are commonplace and the majority may not be referred to psychiatrists. A liaison between the psychiatrist and the faith healer would go a long way towards helping such patients.

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Phentermine and Psychosis

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A case of paranoid psychosis induced by phentermine in a young woman with no previous history of psychiatric illness is presented.

In a young and weight-conscious population, dieting among Singaporeans is fashionable, and the main methods used to reduce weight are diet and exercise. Medications to aid dieting are also available, including traditional herbs (Chinese and Indonesian medicines) and Western drugs, such as phentermine, fenfluramine, and chlobenzorex.

Psychotic reactions to appetite suppressants other than amphetamines are not well documented. The majority of these anorectic drugs are also central nervous system (CNS) stimulants, and in descending order of approximate potency, they are dexamphetamine, phentermine, chlorphentermine, mazindol, diethylpropion, and fenfluramine (Nir, 1980). Phentermine has a similar spectrum of pharmacological effects to amphetamines, but it has weaker CNS stimulation effects (Yelnosky *et al*, 1969). Structurally, phentermine has a close

resemblance to amphetamine, except it has an additional methyl group on the alpha carbon atom.

Experimental evidence (Garattini *et al*, 1978) has shown that phentermine has the property of increasing brain noradrenaline and dopamine, but its potency is much less than that of amphetamines. It has no effect on serotonin. Garattini *et al* also produced evidence that as for amphetamine, the anorectic activity requires an intact noradrenergic system, whereas with phentermine it is still not clear which of the catecholamine systems are involved.

Case report

A 22-year-old, single Eurasian woman took phentermine (30 mg per day) for nine months. Three months after increasing the dose to 90 mg per day she developed a paranoid psychosis, feeling that colleagues were talking about her and were passing messages about her personal affairs through code words. She then began to feel tortured by unknown persecutors and claimed that they used the media (television and newspapers) to spread malicious remarks about her. She also complained of hearing vague voices from unknown sources.

On admission she had paranoid delusions in clear consciousness directed at family, office colleagues, and strangers. On the ward she became paranoid towards her doctors and felt that one doctor was passing confidential information about her to the outside world using 'hand signals'. She was suspicious, but there was no evidence of an affective disorder. After withdrawal of phentermine, her condition improved when trifluoperazine (5 mg twice daily) was prescribed in the second week of admission, increasing to 5 mg twice daily and 10 mg at night. On the 15th day she was discharged free of symptoms.

Two days after discharge she went back on phentermine (90 mg daily), against medical advice. Within a week she developed paranoid delusions towards family members, and when shopping she felt that the shoppers were talking about her. She was readmitted, phentermine was again with-drawn, and trifluoperazine (5 mg three times daily) was prescribed. She recovered fully after seven days and returned to work.

At three-year follow-up she remained well without medication and had not taken phentermine again.

The patient is fourth in a sibship of five and there is no family history of psychiatric illness. She had had no previous history of mental illness. She was obese till the age of ten, and as a teenager she went on a diet and exercised vigorously. Her personality was described as sensitive. There was no evidence of psychic or environmental cause for her psychosis other than phentermine.

Discussion

The author believes that the psychosis was induced by a dosage of phentermine above the recommended level. The psychosis responded to withdrawal of phentermine and treatment with an antipsychotic. As phentermine has a tendency to increase brain dopamine levels, the psychosis could have been caused by this.

Psychosis associated with anorectic drugs has been reported with fenfluramine (Shannon *et al*, 1974), diethylpropion (Hoffman, 1977; Brooke *et al*, 1988; Carney, 1988), and phentermine (Rubin, 1964; Murray, 1964; Brooke *et al*, 1988). Most of these patients were women. Hoffman followed up his two patients, and showed that the drug had in fact precipitated schizophrenia (Hoffman, 1983). In the case reported by Rubin (1964) phentermine had brought about an exacerbation of a pre-existing schizophrenic illness.

Patients may not reveal taking appetite suppressants, as they may consider 'diet pills' as similar to vitamin pills. To avoid pitfalls in diagnosis it is therefore imperative that an accurate drug history be taken. Secret usage of such drugs should be suspected when a female patient presents with a transient psychosis which resolves rapidly and completely with antipsychotic medication. The clinical picture of psychosis associated with appetite suppressants may actually mimic schizophrenia.

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