

# 'STEMETIL®

prochlorperazine

**Indications:** nausea and vomiting of various etiologies; gastrointestinal disorders, drug intolerance, motion and radiation sickness, post-operative conditions, pregnancy, vertigo and migraine.

**Dosage: Adults, oral route** — Usual effective dosage is 5 to 10 mg, 3 or 4 times daily; in very mild cases, a single dose of 5 to 10 mg is often adequate. 'Spansule' Capsules: one or two every twelve hours. This dosage may be increased as required by increments of 10 mg every 2 or 3 days until symptoms are controlled. For maintenance therapy the dosage should be reduced to the minimum effective dose. Because of the lower pediatric dosage requirements, the 'Spansule' Capsules are not intended for use in children. **Rectal route** — 1 or 2 suppositories of 25 mg per day. **Children: oral and rectal routes** — up to 10 mg per day in divided doses according to body weight.

**Parenteral route** (not to exceed 40 mg per day) — **In general practice:** 5 to 10 mg I.M., 2 or 3 times a day. **In surgery:** 5 to 10 mg I.M., 1 to 2 hours before anesthesia. Repeat once during surgery if necessary. Post-operatively, same dose of 5 to 10 mg I.M., repeated every 3 to 4 hours. May be given I.V. during and after surgery in the infusion solution at a concentration of 20 mg per litre. **In obstetrics:** 10 mg I.M. during first stage of labor; subsequent 10 mg doses as needed. Post partum: the usual total daily dose is 15 to 30 mg orally or I.M.

**Contraindications:** Comatose or deeply depressed states of the CNS due to hypnotics, analgesics, narcotics, alcohol, etc.; hypersensitivity to phenothiazines; blood dyscrasias; bone marrow depression; liver damage.

**Warnings and precautions:** etiology of vomiting should be established before using the drug as its antiemetic action may mask symptoms of intracranial pressure or intestinal obstruction. Patients with a history of convulsive disorders should be given an appropriate anticonvulsant while on therapy. Tardive dyskinesia may occur in patients on long-term therapy. If used with CNS depressants, the possibility of an additive effect should be considered. Use with great caution in patients with glaucoma or prostatic hypertrophy. The drug may impair the mental and/or physical abilities required for the performance of potentially hazardous tasks such as driving a car or operating machinery, especially during the first few days of therapy. Keep in mind that all medications should be used cautiously in pregnant patients, especially during the first trimester.

**Side effects:** extrapyramidal reactions, disturbed temperature regulation and seizures have been encountered. Other side effects due to phenothiazine derivatives should be borne in mind; for complete list, see product monograph.

**Overdosage:** no specific antidote; symptomatic treatment. If a pressor agent is required, norepinephrine may be given (not epinephrine as it may further depress the blood pressure).

**Dosage forms:** tablets 5, 10 and 25 mg; ampoules 2 ml/10 mg; liquid 5 mg and 15 mg per teaspoonful (5 ml); suppositories 5, 10 and 25 mg. 'Spansule' Capsules, 10 mg.

Complete information upon request



The drug industry does *not* "pay" \$250 000 annually to the Canadian Pharmaceutical Association to subsidize CPS publishing costs. Individual drug manufacturers who see fit to "advertise" their products in the one specific section of CPS (and only one section — the pink pages) do so voluntarily on a "value received" basis. This participation by 80 companies partly (not "largely") defrays publishing costs. Where has Bell been all this time to believe that advertising revenue does not support most professional literature and other literature available on a regular basis?

The first of his "main findings" is a misleading distortion. We suggest that he count again.

His second "finding" — that "the selection of drugs for inclusion is under the exclusive control of the drug industry" — is wrong. The continuation of the sentence that refers to paying "to have drugs of its choice only included in certain sections" is a destructive distortion of fact. Inclusion of product names in the pink pages is outlined in the lead-in paragraph of that particular CPS section. The product recognition section is not yet all that we wish it ultimately to be, but we are thankful that many companies see fit to help us help those who very often need this quick reference, adjunctive information, and we are indeed appreciative of the extra trouble to which manufacturers go to provide actual dosage forms for CPS photographers and lithographers.

The third "finding" is also a distortion of fact. Ask the manufacturers themselves if they "control" CPS monographs. Naturally, the first information on a manufacturer's product comes from that manufacturer. The CPS editors and advisers take it from there. Thus CPS editorial production typifies a high degree of cooperative input of expertise from pharmacy, medicine and industry, including the manufacturers' medical directors.

Bell's stated fourth "finding" is his opinion only. Maybe his opinion is shared by others, maybe not. In any events, if a drug product is legally marketed for use by health care professionals in Canada, we deem it to be a responsibility of CPS to at least include a description for professional reference. It is the prerogative of agencies other than CPS to say whether a product should be marketed or used, or both, in clinical practice.

Bell's fifth "finding" is wrong. We suggest that he look again at CPS. We suggest that those who read his letter might also wish to do so and, among other things, check the general (gen-

eric) monographs against the relevant brand-name monographs.

Writing on behalf of all involved in the production of CPS, we make no claims that it is perfect. What is? But a degree of relative perfection is indeed continuously sought, and the tangible responses of thousands indicate progressive enhancement is being recognized.

Presumably Bell's proposed production of an alternative compendium, even if the suggestion had any basis for practical implementation, would have all the elements of perfection. Impossible!

Finally, on behalf of the editors, the editorial advisory board and their consultants and, indeed, the medical directors and product researchers of the pharmaceutical industry, I cannot do other than express deep concern and objection that Bell, in his letter's final sentence, accuses CPS of being dishonest and unreliable (in any manner).

While Bell's letter is devoid of objectivity, we do not object to its publication but we ask that these comments by us, invited by him, be published concurrently.

J.C. TURNBULL, CM, BSP  
Executive director  
Canadian Pharmaceutical Association  
175 College St.  
Toronto, Ont.

## Diet pill psychosis

*To the editor:* I have recently seen two cases of psychosis that occurred shortly after the patients began using "diet pills" prescribed by their family doctors. Physicians should be aware that although amphetamines have been removed from the market and are no longer recommended in the treatment of obesity because of their ineffectiveness and their potential for producing habituation and psychoses (especially paranoid states), the newer diet pills have the same risks. All the diet pills currently listed in the "Compendium of Pharmaceuticals and Specialties" are amphetamine analogues and presumably work in the hypothalamic area, either depressing the appetite centre or stimulating the satiety centre. However, it is not unlikely that these drugs, like amphetamines, also act on other areas of the brain such as the nearby limbic system, reticular activating system, midbrain or median forebrain bundle.

The two cases reported below are examples of psychoses precipitated by currently available diet pills that could easily be mistaken for schizophrenic illnesses.

### Case 1

A 20-year-old woman was referred for

# ModaCon<sup>®</sup> Tablets\*

0.5 mg . . . . . norethindrone  
35mcg . . . . . ethinyl estradiol

**INDICATION:** MODACON Tablets are indicated for conception control.

**ACTION:** MODACON acts through the mechanism of gonadotrophin suppression, i.e., through the estrogenic and progestational actions of the active ingredients. Alterations in cervical mucus and in the endometrium may also contribute to the efficacy of MODACON.

**CONTRAINDICATIONS:**

1. Thrombophlebitis, thromboembolic disorders, cerebral vascular disease, coronary thrombosis, or a history of these conditions.
2. Significant liver dysfunction or disease.
3. History of cholestatic jaundice.
4. Known or suspected malignancy of the breast or genital tract or history of these conditions.
5. Known or suspected estrogen-dependent neoplasia.
6. Undiagnosed abnormal vaginal bleeding.
7. Known or suspected pregnancy.
8. During the period a mother is breast feeding an infant.
9. Any ocular lesion associated with ophthalmic vascular disease such as partial or complete loss of vision, defect in visual fields or diplopia.
10. Classical migraine.

**WARNINGS:**

1. Discontinue medication at the earliest manifestations of:
  - A. **Thromboembolic Disorders:** (i) thrombophlebitis (ii) cerebrovascular disorders (including hemorrhage) (iii) pulmonary embolism (iv) myocardial ischemia (v) retinal thrombosis.
  - B. **Visual Disturbances:** (i) gradual or sudden, partial or complete loss of vision (ii) proptosis or diplopia (iii) onset or aggravation of migraine (iv) papilledema (v) ophthalmic vascular lesions.
  - C. Development of headache of a new pattern which is recurrent, persistent or severe and undiagnosed.
  - D. Psychiatric disturbances.
2. Rule out pregnancy before initiating or continuing administration of oral contraceptives in patients who have missed two consecutive menstrual periods. If the patient has not adhered to the prescribed regimen, pregnancy should be considered at the time of the first missed menstrual period.
3. Patients with conditions such as epilepsy, asthma, and cardiac or renal dysfunction which may be adversely affected by some degree of fluid retention require careful observation.
4. In women with underlying risk factors for coronary artery disease (such as hypertension, hypercholesterolemia, obesity, diabetes, history of pre-eclamptic toxemia), oral contraceptives have been reported as an additional risk factor.

**PRECAUTIONS:**

1. **Physical examination and follow-up**
  - A. Before oral contraceptives are prescribed, a thorough physical examination should be made including a blood pressure determination. Breasts, liver and pelvic organs should be examined, and a Papanicolaou smear should be taken.
  - B. The first follow-up examination should be done within 6 months; thereafter, examinations should be made at least once a year. At each annual visit, examination should include those procedures performed at the initial visit.
2. **Hepatic function**
  - A. Patients with an history of jaundice should be prescribed oral contraceptives with great care and under close observation. The development of severe generalized pruritus or icterus requires that the medication be withdrawn until the problem is resolved. If the jaundice should prove to be cholestatic in type, administration of oral contraceptives should not be resumed.
  - B. Changes in composition of the bile and the appearance of cholesterol gall stones have been reported in patients taking oral contraceptives.
  - C. Hepatic neoplasms (mostly adenomas) and nodular hyperplasias or hamartomas have been reported in users of oral contraceptives. Although these tumours are uncommon, they have caused fatal intra-abdominal hemorrhage and should be considered in women presenting with acute abdominal pain, an abdominal mass or evidence of intra-abdominal bleeding.
3. **Hypertension** Patients with essential hypertension may be prescribed oral contraceptives but only under close supervision. If a significant elevation of blood pressure in previously normotensive or hypertensive subjects occurs at any time during the administration of the drug, cessation of medication is necessary.
4. **Diabetes** Diabetic patients or those with a family history of diabetes should be observed closely to detect any alterations in carbohydrate metabolism. Latent diabetics who can be kept under close supervision may be prescribed oral contraceptives. Young patients with overt diabetes whose disease is of recent origin, well-controlled, and not associated with hypertension or other signs of vascular disease such as ocular fundal changes, should be closely observed.
5. **Metabolic and endocrine diseases**
  - A. In metabolic or endocrine diseases, and when the metabolism of calcium and phosphorus is abnormal, careful clinical evaluation should precede medication and a regular follow-up is recommended.
  - B. The risk of complications due to adrenocortical insufficiency appears to be minimal with oral contraceptive therapy. However, physicians should be aware of this rare problem.
  - C. Estrogen-progestogen combinations may cause an increase in plasma lipoproteins and should be administered with caution to women known to have preexistent hyperlipoproteinemia.
6. **Breasts** Special judgment should be used in prescribing oral contraceptives to women with fibrocystic disease of the breast.
7. **Vaginal bleeding** Persistent irregular vaginal bleeding requires investigation to exclude the possibility of pregnancy or neoplasm. If these can be excluded, appropriate adjustment of dosage may be indicated.
8. **Fibroids** Patients with fibroids (leiomyomata) should be carefully observed. Sudden enlargement, pain, or tenderness of uterine fibroids require discontinuance of medication.
9. **Age**
  - A. Adolescent patients should be assessed for adequate skeletal development prior to medication which should be used with caution since oral contraceptives may accelerate epiphyseal closure.
  - B. Oral contraceptive therapy may mask the onset of the climacteric.
  - C. In women over the age of 40 years, use of oral contraceptives may be associated with an increased risk of cardiovascular and metabolic complications. In this age group, when fertility control is desired, some other non-hormonal method for contraception should be advised.

**10. Emotional disorders** Patients with a history of emotional disturbances, especially the depressive type, are more prone to have a recurrence of depression while taking oral contraceptives. In cases of serious recurrence, the medication should be discontinued.

**11. Laboratory tests** Laboratory test results should not be considered reliable unless oral contraceptive therapy has been discontinued for two to four months for therapy may alter the following determinations and possibly mask underlying disease:

- A. Liver function tests: Bromsulphalein retention - increased. SGOT - variously reported elevations from zero to six or seven percent to sixteen to eighteen percent. Alkaline phosphatase - slightly elevated in two percent or less of patients. Serum bilirubin - elevations noted rarely or not at all.
- B. Coagulation tests: Elevation of test values reported for such parameters as prothrombin and Factors VII, VIII, IX and X. Increased platelet aggregability. Decreased antithrombin III.
- C. Thyroid function tests: Protein binding of thyroxine is increased as indicated by increased PBI and total serum thyroxine concentrations and decreased T<sub>3</sub> resin uptake.
- D. Adrenocortical function tests: Plasma cortisol is increased. Reported impaired adrenocortical response to metypralone administration is now attributed to accelerated metypralone conjugation by estrogen.
- E. Reproductive endocrine profile changes: Luteinizing hormone - the mid-cycle surge is suppressed with variable effects on tonic levels being noted. Pregnanediol - suppressed. Urinary estrogens - slight or zero increase.
- F. Other tests: Phospholipids and tri-glycerides - increased. Serum folate values - decreased. Tryptophan metabolism is disturbed. Increased glucose blood levels.

**12. Tissue specimens** If surgical procedures are performed, pathologists should be advised of oral contraceptive therapy when specimens are submitted for examination.

**13. Return to fertility**  
A. After discontinuing oral contraceptives, the patient should await the resumption of normal ovulatory cycles before attempting to become pregnant.

B. Women with a history of oligomenorrhea or secondary amenorrhea or women with irregular cycles may remain anovulatory or become amenorrheic following estrogen-progestogen combination therapy.

**14. Fetal abnormalities** Fetal abnormalities have been reported to occur in the offspring of women who have taken progestogens and/or estrogens during pregnancy. The safety of oral contraceptives in pregnancy has not been demonstrated. Pregnancy should be ruled out before initiating or continuing the contraceptive regimen. Pregnancy should always be considered if withdrawal bleeding does not occur.

**15. Thromboembolic complications - post surgery** Retrospective studies have reported an increased risk of post surgery thromboembolic complications in oral contraceptive users. It has been recommended that therapy be discontinued at least one month prior to elective surgery and not resumed until at least two weeks after hospital discharge following surgery of the type associated with the increased risk of thromboembolism.

**16. Concomitant medication** A reduced efficacy and increase in incidence of breakthrough bleeding have been reported in oral contraceptive users treated concomitantly with barbiturates, rifampicin, phenylbutazone, phenytoin or ampicillin.

**ADVERSE REACTIONS:** Side effects most commonly reported in early cycles of oral contraceptive therapy include breakthrough bleeding, spotting, nausea, vomiting and other gastrointestinal disturbances, weight change. These frequently decrease with continued use. Other common side effects include: change in menstrual flow, edema, chloasma (which may persist post therapy), amenorrhea, breast changes (tenderness, enlargement and secretion).

In addition to the conditions and disorders discussed above, the following have been reported as adverse reactions in patients using MODACON Tablets.

- |                                   |                            |
|-----------------------------------|----------------------------|
| Neuro-vascular lesions of the eye | Cystitis-like syndrome     |
| Rash                              | Headache                   |
| Cervical erosion and secretions   | Nervousness                |
| Suppression of lactation          | Fatigue                    |
| Pre-menstrual-like syndrome       | Hirsutism                  |
| Changes in libido                 | Loss of scalp hair         |
| Leg cramps                        | Erythema multiforme        |
| Relative pyridoxine deficiency    | Erythema nodosum           |
| Hemorrhagic eruptions             | Itching                    |
| Cholestatic jaundice              | Anovulation post-treatment |
| Mental depression                 | Dizziness                  |
| Migraine                          |                            |

The following adverse reactions have been observed in users of oral contraceptives:

- |                    |                        |
|--------------------|------------------------|
| Thrombophlebitis   | Hepatic neoplasm       |
| Pulmonary embolism | Cholesterol gallstones |

**TREATMENT OF OVERDOSAGE OR ACCIDENTAL INGESTION:** In case of overdosage or accidental ingestion by children, the physician should observe the patient closely although no medication is required. Gastric lavage should be given if considered necessary.

**DOSE AND ADMINISTRATION:**  
**Availability** MODACON Tablets are available in 21-day and 28-day DIALPAK<sup>®</sup> Tablet Dispenser Units.

**Composition** Each white tablet engraved on both sides with "Ortho 1/2" contains 0.50 mg norethindrone and 0.035 mg ethinyl estradiol. In the 28-day regimen the green tablets contain inert ingredients.

**21-day Regimen:** For the first cycle only, have your patient take one white tablet a day for 21 days, starting on day 5 of her menstrual cycle. At the end of the course of MODACON she stops the tablets for one week. From now on, she simply completes each course of tablets, stopping at the end of each course for one week. The tablets should be started whether or not menstruation has occurred or is finished. If spotting or bleeding should occur while taking MODACON, she should continue taking the tablets in the regular manner.

**28-day Regimen:** Have your patient take one white tablet a day for three weeks starting on the first Sunday after her menstrual cycle begins. For example, if her period begins Monday to Saturday, she takes her first tablet the following Sunday. If her period begins on a Sunday, she takes her first tablet that very day. She then takes one inert green tablet daily for one week in order to maintain a regular 28-day cycle. Withdrawal bleeding should occur during the week of taking the inert tablets. However, whether or not bleeding has occurred or is finished, the white tablets should be started again the day after the last green tablet is taken.

**Duration of Use:** The 21-day or 28-day cyclic therapy may be continued for as long as conception control is desired.

**Reference:** 1. Data on File, Ortho Pharmaceutical (Canada) Ltd.



psychiatric consultation because of a 2-month history of psychiatric symptoms. She complained of feeling "uptight" and she had the constant feeling that she had seen before everything and everyone she met (déjà vu). She felt that nothing that was happening was new but that she had lived it all before. She also felt that her mother had been trying to poison her and that people at her college were playing games on her, such as turning the clock back, because they did not like her. She imagined that she could speak three different languages and that these languages would create arguments inside her; she felt as if the Holy Spirit and the Devil and herself were in conflict.

Results of physical examination, hematologic study and urinalysis done by the family doctor were normal. The patient reported no past medical illnesses and denied taking any medications or "street drugs" - specifically lysergic acid diethylamide and amphetamines. She had never been to a psychiatrist, nor was there any evidence of psychiatric illness in her family. Both she and her family described her as likeable but shy, quiet and nervous. The family denied any suggestions of previous thought disorder, confused thinking or inappropriate affect.

Developmental milestones in all areas had been normal although her parents had fought constantly during her childhood and had separated when she was 5 years old. The patient lived with her father until she was 15 years old and then lived on her own until the onset of these symptoms. She had a few good friends and several social interests including dating and dancing.

She was polite, cooperative and immediately likeable although she seemed anxious, scared and perplexed. Her thoughts and speech were not hurried but she was delusional, firmly stating that she had met the examiner before and she felt that she knew what he would say before he said it. There was no evidence for looseness of associations. The sensorium was clear as to time, place, person, concentration and memory.

The provisional diagnosis was acute schizophrenic reaction and the patient was treated as an outpatient with trifluoperazine (Stelazine), 15 mg qhs; she took this medication for 3 weeks, after which time she felt "50% better". The patient then told me that she had been taking diet pills, phentermine (Ionamin), 30 mg/d for 3 months, beginning 1 month prior to the onset of symptoms. She had not mentioned these pills previously as she did not consider them medicine. The diet pills were stopped and trifluoperazine was continued. Within 3 weeks she felt "back to normal" and discontinued all medication. Follow-up 2 months later showed no recurrence of symptoms.

**Case 2**

A 48-year-old woman was referred for psychiatric consultation because of paranoid ideation of 4 weeks' duration. She had been hearing voices (usually female) through the wall of her apartment, which were keeping her awake at night; she couldn't make out what they were saying.

Her husband could not hear these voices and she became increasingly disturbed, afraid to go to bed at night, feeling that people were doing this just to annoy her. She began to feel that eyes were upon her during the day and that people could influence her heart, which felt as if it were pounding.

The family reported that the patient had always been a good wife and mother. She had never previously been to a psychiatrist. She had no medical problems except moderate obesity and denied taking any medication, including amphetamines. When asked specifically about diet pills she reported taking Tenuate (diethylpropion hydrochloride), 25 mg *tid*, starting 3 months prior to onset of her symptoms.

She appeared anxious and frightened. She knew that her fears were unfounded but the voices seemed real. The patient's thoughts were otherwise coherent and logical and she expressed them at a normal rate. The sensorium was clear. She was treated as an outpatient with trifluoperazine (Stelazine), up to 10 mg/d, and her diet pills were stopped. She gradually became asymptomatic in 6 weeks. The trifluoperazine was discontinued 8 weeks later, and at follow-up 1 year later the patient was well.

Physicians should be aware of the potential dangers of diet pills and that patients may not consider these agents "medicine" and thus deny taking medication.

I do not know whether these patients' psychoses were due to the pills or whether they had underlying "psychotic potential". However, both had a relatively good premorbid personality and no previous psychiatric illness. Psychotic symptoms developed 1 to 3 months after the patients started to take the pills, and both recovered quickly when the pills were discontinued and relatively small doses of neuroleptics were given for a short time. Because the effectiveness of these diet pills has never been validated and because of their potential harm, it is unwise to use them in the treatment of obesity.

BRIAN F. HOFFMAN, MD, FRCP[C]  
Clarke Institute of Psychiatry  
205 College St.  
Toronto, Ont.

## Waiting years

*To the editor:* The Nov. 20 cover of *CMAJ* showed a rather old man — well dressed, shoes polished — walking slowly, looking at the ground in a deserted park. At once he seemed to me like a poor old man waiting to die. His despondent expression did not suggest the "golden years" he should be looking forward to.

The cover should have depicted a healthy man, around 65, dressed casually, playing golf, gardening, spending time with his grandchildren or fishing. As it stands, the cover should have

been entitled the "waiting years" rather than the "golden years".

NORAH CAMPBELL  
RR #1  
Bognor, Ont.

## Problem-oriented v. disease-oriented audits

*To the editor:* Mr. Korcok's excellent discussion on the use of criteria or standards in peer review (*Can Med Assoc J* 115: 937, 1976) should be read by all physicians. As one involved in medical audit in a 400-bed acute-care hospital, I would like to make one or two comments.

I am not aware of any convincing evidence that retrospective audits using preselected criteria have any significant effect on the pattern of practice in a hospital. McSherry<sup>1</sup> in New York and Nelson<sup>2</sup> in Utah found that such audits had no effect on physicians' performance as measured by repeat audits after a suitable interval. In my opinion there is no such thing as "ideal" or "optimal" standards for any disease. Even for common conditions like cholecystitis and pneumonia, management of the patient can vary greatly, depending upon severity of the disease, complicating factors and host response. The criteria of process and outcome will (or should), therefore, vary from patient to patient. Determination of serum electrolyte concentrations may be unnecessary in a young person with respiratory tract infection but would be mandatory in an old, dehydrated man with pneumonia. When physician committees are asked to set criteria, they understandably err on the side of safety. The criteria agreed upon are meant to cover all situations, with the result that criteria lists become extensive. Adherence to such lists is bound to increase the workload without corresponding benefit to the patient.

In our experience a problem-oriented audit carried out on a suitably selected problem area, such as excessive ordering of blood, underuse of blood components or inappropriate use of a particular antibiotic, is less time-consuming and more useful than a disease-oriented audit. The results of a problem-oriented audit can be presented to the medical staff in an educational format, and the response can be gratifying.

M. ZAHIR, MD, D PHIL, FRCP[C]  
Clinical pathology service  
Royal Inland Hospital  
Kamloops, BC

## References

1. MCSHERRY CK: Quality assurance: the cost of utilization review and the educational value of medical audit in a university hospital. *Surgery* 80: 122, 1976
2. NELSON AR: Orphan data and the unclosed loop: a dilemma in PSRO and medical audit. *N Engl J Med* 295: 617, 1976

## Insomnia in cancer patients

*To the editor:* To test anecdotal accounts that patients with cancer commonly have insomnia we have administered an 18-item questionnaire to 47 patients consecutively referred for radiotherapy to the Norris Cotton Cancer Center in Hanover, New Hampshire. In 45% of the patients, total sleep time per week averaged less than 50 hours, and in 23% it averaged less than 40 hours. The patients reported as much difficulty in getting to sleep and staying asleep as the neuropsychiatric patients studied by Weiss, Kasinoff and Bailey.<sup>1</sup> Compared with the 100 hospitalized medical and surgical veterans studied by Johns and associates<sup>2</sup> our patients slept for fewer hours per week.

The most important factor affecting ability to get to sleep and to stay asleep was depression ( $r = -0.361$ ;  $P < 0.01$ ), with reported anxiety and pain controlled. The reported interference of pain with sleep was negatively related to depression ( $r = -0.323$ ;  $P < 0.05$ ), with anxiety controlled.

This pilot study confirms the clinical impression that sleep is more often and more severely disturbed in cancer patients than in the general population<sup>3</sup> and in patients with nonmalignant medical conditions.<sup>3</sup> Contrary to our expectation, insomnia was positively correlated with reported symptoms of anxiety and depression but *not* with pain. These preliminary results suggest the need for a more comprehensive study of the prevalence and severity of insomnia in various categories of cancer patients. It is worth studying the psychological and physiological intervening variables.

We suggest that all cancer patients should be asked about difficulties in sleeping and that, if insomnia is reported, the patient should be asked about symptoms of depression and anxiety. If such symptoms are reported, the patient should be given a suitable psychotropic drug, such as thioridazine hydrochloride (Mellaril). Johnston<sup>4</sup> reported relief of anxiety, depression and insomnia in patients with terminal cancer given thioridazine, 75 mg daily.

A. BESZTERCZEY, MD  
McGill University  
Montreal, PQ

Z.J. LIPOWSKI, MD  
Dartmouth Medical School  
Hanover, NH

## References

1. WEISS HR, KASINOFF BH, BAILEY MA: An exploration of reported sleep disturbance. *J Nerv Ment Dis* 134: 528, 1962
2. JOHNS MW, EGAN P, GAY TJA, et al: Sleep habits and symptoms in male medical and surgical patients. *Br Med J* 2: 509, 1970
3. MCGHIE A, RUSSELL SM: The subjective assessment of normal sleep patterns. *J Ment Sci* 108: 642, 1962
4. JOHNSTON B: Relief of mixed anxiety-depression in terminal cancer patients. *NY State J Med* 15: 2315, 1972