others can lose consciousness, and some others may develop automatisms provoked with hot water head bath can be labeled “reflex neurosis.” The current trend is to use the term NEAD (non-epileptic attack disorder) for such varied picture.\[8\]

This simple procedure that has been adopted here can be adopted as a treatment procedure for those who have phobia with or without epileptic component. More controlled studies can clear the darkness prevailing on this disorder.

V. A. P. Ghorpade
Department of Psychiatry, M.S. Ramaiah Medical College, Bangalore, Karnataka, India
E-mail: anandprakashg@yahoo.com

**Carisoprodol-induced amnestic state**

Sir,
A 35-year-old man was admitted with a complaint of abuse of carisoprodol. The patient had history of opioid dependence but currently abstinence since last 2 years. After stopping opioid use, he started using carisoprodol tablets, initially 700 mg/day, increasing over a period of 2 years to 1,050 mg/day. When he presented to our center, he satisfied the criteria for dependence (ICD 10),\[1\] with prominent tolerance, craving, and salience. Following carisoprodol use, he described 10-15 episodes, during which he had walked for 3-4 km without any memory of events that had occurred on the way, and he could not remember the events when other people narrated those to him. However, he would not lose way and would reach home every time during these episodes. He would not identify people whom he had known before, when he met them on the way during these periods. Each of these episodes would last from 45 min to 1 h. The patient had experienced his last episode 1 week before he presented to us.

He did not report recent use of alcohol or other drugs, symptoms of aura or postictal state, recent head injury, or any other illness. The last intake of tablets was 2 days prior to admission. He did not manifest significant withdrawal symptoms except for mild body ache. Physical examination showed vital signs within normal limits. He was alert, oriented; and he scored 30 out of 30 on the mini mental state examination (MMSE).\[2\] Electrolytes, liver function tests, complete blood counts were within normal limits. Urine screening for cannabis, opioids, benzodiazepines, amphetamines, and cocaine were negative. His EEG (electroencephalogram) was normal.

Carisoprodol, a synthetic congener of meprobamate, is a centrally acting muscle relaxant indicated in acute painful musculoskeletal conditions.\[3\] An extensive literature search did not reveal any prior reports of amnestic states with carisoprodol alone. There is a report of amnestic periods in a person using a combination of carisoprodol and treatment with multiple psychotropics.\[4\] In this report, the authors reported a case of opioid dependence, seizure disorder with major depressive disorder being prescribed carisoprodol for back and neck pain. He later developed tolerance and withdrawal symptoms for carisoprodol. He was found to have amnestic episodes, which were attributed to use of multiple psychoactive medications (sertraline, zolpidem, quitiapine, gabapentin), apart from carisoprodol.\[4\] Recently, carisoprodol use among drivers in Norway was found to result in significant impairment and risk for accidents, irrespective of blood meprobamate concentration.\[5\] In the index case, our patient was not using any other drugs or medications during the period of carisoprodol use. Hence this symptom is likely to be related to carisoprodol.

There have been previous reports of carisoprodol dependence.\[6,7\] Most patients reported using carisoprodol along with opioids to decrease the withdrawal symptoms of opioids and to avoid subsequently becoming dependent on it. However, this patient had started using carisoprodol after stopping opioids. In a recent report, specific withdrawal symptoms like anxiety, tremulousness, insomnia, jitteriness, muscle twitching, and hallucinations were described. These symptoms are most likely caused by withdrawal from the meprobamate that accumulates after large amounts of carisoprodol are ingested.\[8\]

Carisoprodol acts by releasing its metabolite meprobamate.\[3\] There are reports which attest to the dependence-causing potential of meprobamate. Though there is a report of memory deficits as assessed on neuropsychological tests

---

**REFERENCES**

1. Venkataramiah V. Study of hot water bath induced neurobehavioural syndrome (hot water epilepsy) with a preliminary report on behavioral psychotherapeutic management. Indian J Psychiatry 1998;40: Supplement April.
2. Subramanyam HS. Hot water epilepsy. Prog Clin Neurosci 1989;32-43.
3. Schmidt D. Medical intractability in partial epilepsies. Epilepsy surgery, In: Luders H, editor. New York: Raven Press; 1991.
4. Mani KS, Rangan G, Srinivas HV, Kalyansundaram S, Narendran S, Reddy AK. The yelandur study a community based approach to epilepsy in rural south india epidemiological aspects. Seizure 1998;7:281-88.
5. Nag D. Non epileptic seizure. J Intern Med India 1998;9:116-8.
6. Antebi D, Bird J. The facilitation and evocation of seizures. Br J Psychol 1992;160:154-64.
7. Ioos C, Fohlen M, Villeneuve N, Badinand-Hubert N, Jalin C, Chellout- Heraut F, et al. Hot water epilepsy: a benign and unrecognized form. J Child Neurol 2000;15:125-8.
8. Roy D, Chakrarthy A. Psychogenic seizures, Advances in Clinical Neurosciences. In: Sinha KK, Chandra P, editors. Association of Neuroscientists of Eastern India; 2000.
in a 53-year-old man on diazepam and meprobamate,[9] a literature search did not reveal amnestic episodes with meprobamate. The exact mechanism of carisoprodol in the central nervous system is not known; it is assumed that it acts through GABA, receptor. There is a case report where benzodiazepine antagonist flumazenil was used to reverse a case of carisoprodol intoxication.[10] This supports that carisoprodol may be a GABA, receptor indirect agonist with central nervous system chloride ion channel conductance effects similar to the benzodiazepines.

**Organization:** National Institute of Mental Health and Neurosciences; **Place:** Bangalore; **Date:** 02-08-2007

**Arun Gupta, K. Sreejayan, Prabhat Chand, Vivek Benegal, Pratima Murthy**

Department of Psychiatry, National Institute of Mental Health and Neurosciences, Bangalore, Karnataka, India  
E-mail: chand@nimhans.kar.nic.in

**Non-compliance of prescriptions by the patients**

Sir,

Your comprehensive, but brief Editorial[1] in the latest issue of IJP concerning the topic of non-compliance of prescriptions by the patients, often abetted by their families, addresses a problem in clinical practice which is generally neglected in our professional literature.

If you permit me, I would like to touch upon a few more etiological issues in the dimension of prevailing social values and attitudes. They are briefly described below. If there is no change in these values and attitudes, then, it is most unlikely that the problem of non-compliance will ever get remedied.

1. During my service at NIMHANS, we used to supply free drugs to poorer out-patients to last them a month or two, with instructions to come for follow-up by the time the medicines are finished. Most would turn up many months later with or without an exacerbation of symptoms. Their reasons for not continuing the medicines and following the instructions were related to their vocation: having to attend to tilling the land, sowing, weeding or harvesting, etc. Here, the reason for non-compliance is related to their life’s priorities. Their daily bread claims a higher priority than their health; they are generally hardy (resilient) people who can tolerate a considerable degree of suffering. Only an excited schizophrenic or manic patient may upset their priorities. With the exception of a few conditions, mental health is not a priority issue for them.

2. In the last three to four decades, there have been nationwide projects directed at eliminating tuberculosis and leprosy with free distribution of medicines, even at patients’ doorsteps. But, follow-up studies showed poor drug compliance. Many reasons were speculated and discussed. Personally, I believe this problem to be related at least partly to an attitude of complacency: attending to a life’s problem only when it crosses a ‘feelable’ threshold of tolerance, only when it becomes bothersome, not giving importance to the underlying pathology. This attitude is faithfully adopted by elected representatives in the governments: attempting to deal with problems only when they become acute.

3. As mentioned in the editorial, following the prescription advice drug is related to such factors as compliance, adherence, collaboration and cooperation. The first two are affiliated to a sense of personal discipline and the last two to a sense of responsibility. In our psychosocial literature, this sense of responsibility is called ‘internal locus of control.’ But, unfortunately, different agencies for different reasons have been severely undermining this ‘internal locus of control.’ For example: (a) Under the pressure of work-load, the health profession itself has been promoting ‘pill-box’ therapy, “you take this medicine and you will be alright.” Such clinical behaviour, though un-intentionally, fosters an external locus of control, an attitude like “I will take medicines when I am ill...”. (b) This attitude is further reinforced by governmental and even WHO slogan of “right to health.” This attitude, described by Leon...

**REFERENCES**

1. World Health Organization. International Classification of Diseases - 10th revision. 1994.
2. Folstein M, Folstein S, McHugh P. Mini-mental state: A Practical method for grading the cognitive state of patients for the clinician. J Psychiatr Res 1975;12:189-98.
3. Chamey DS, Mihic SJ, Harris RA. Hypnotics and sedatives. In: Hardman JG, Limbird LE, Gilman AG, editor. Goodman and Gilman’s the pharmacological basis of therapeutics. 10th ed. 2001. p. 399-427.
4. Heacock C, Bauer MS. Tolerance and dependence risk with use of carisoprodol. Am Fam Physician 2004;69:1622-3.
5. Bramness JG, Skurtveit S, Marland J, Engeland A. The risk of traffic accidents after prescriptions of carisoprodol. Accid Anal Prev 2007;39:1050-5.
6. Morse RM, Chua L. Carisoprodol dependence: A case report. Am J Drug Alcohol Abuse 1978;5:527-30.
7. Sikdar S, Basu D, Malhotra AK, Varma VK, Mattoo SK. Carisoprodol abuse: A report from India. Acta Psychiatr Scand 1993;88:302-3.
8. Reeves RR, Hammer JS, Pendavris RO. Is the frequency of carisoprodol withdrawal syndrome increasing? Pharmacotherapy 2007;27:1462-6.
9. Brooker AE, Wiens AN, Wiens DA. Impaired brain functions due to diazepam and meprobamate abuse in a 53-year-old-male. J Nerv Ment Dis 1984;172:999-991.
10. Roberge RJ, Lin E, Krenzelok EP. Flumazenil reversal of carisoprodol (Soma) intoxication. J Emerg Med 2000;18:61-4.