

Nicotine Replacement Therapy in the Psychiatric Emergency Department

In this issue, Allen and colleagues (1) report on the first randomized placebo-controlled study of the efficacy of nicotine replacement therapy in reducing the level of agitation in smokers with schizophrenia. The study was conducted in a psychiatric emergency service (at the Hospital of the University of Geneva), a setting in which agitation is a common problem. The authors report that among smokers with schizophrenia who received nicotine replacement therapy in addition to treatment as usual with antipsychotic medication, agitation levels were 33% lower at 4 hours and 23% lower at 24 hours than among those who received placebo along with usual care. Although all patients received antipsychotic medication as clinically indicated, the separation between the nicotine replacement and placebo groups was significant and was similar to that demonstrated in clinical trials of parenteral antipsychotic medications.

This study, while specifically about the benefits of nicotine replacement therapy, can be seen as part of a broader research effort to find ways to improve the care of psychiatric patients in the emergency department. This area of clinical research has major significance in the United States, where overcrowding of emergency departments has become a nationwide problem. Emergency departments are the one hospital setting where there is no control over the inflow of patients. "Boarding" of patients has become routine across the United States, and lengths of stay of 48 hours or more are not uncommon (2). The rate of emergency department visits by patients with psychiatric and substance use disorders increased by 15% from 1992 to 2000 and represented 5.4% of all emergency department visits in 2000 (3). Over this same time frame, the number of inpatient psychiatric beds in the United States has been decreasing, and capacity levels are now significantly lower than they were in previous decades (4). Psychiatric patients tend to have significantly longer lengths of stay in the emergency department than do other patients (5), and long boarding times have become common. While some emergency departments have a discrete, dedicated psychiatric emergency service, like that at the Hospital of the University of Geneva, most endeavor to provide evaluation and treatment in a setting that is neither designed nor staffed specifically for psychiatric care.

Agitation and violence are major problems in both emergency department and psychiatric inpatient settings. In a large multisite sample of the records of 400 psychiatric patients seen in emergency departments, 52% showed evidence of agitation, with 25% receiving medication to reduce agitation and 6% requiring physical restraint (6). A study of psychiatric units found that there were 0.5 incidents of violence per week per occupied bed, with 58% of these judged as "serious" and harm occurring in 45% (7). Patients with schizophrenia are at high risk for agitation; in one sample, almost one-third of admitted patients had a proximal history of violent behavior (8). Research that helps

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improve the assessment of risk factors for agitation and violence and points us to more effective treatments is vitally important.

Nicotine deprivation has been found to increase agitation in smokers, especially in those with high baseline irritability (9). Patients with psychiatric illness and substance use disorders smoke at higher rates than the general population, and the incidence is approximately 70% in patients with schizophrenia (10). Remarkably, in a recent study of psychiatric inpatient units, none of the patients who were identified as current smokers received a diagnosis of nicotine dependence or withdrawal, and nicotine replacement therapy was prescribed for only 56% of these patients (11). Compared with nonsmokers and smokers who received nicotine replacement, smokers who did not receive nicotine replacement had higher levels of irritability and agitation, were more likely to be craving cigarettes, and were twice as likely to be discharged against medical advice. Moreover, a trend was observed for higher rates of lorazepam use and need for seclusion among smokers who did not receive nicotine replacement therapy. Notably, even when nicotine replacement therapy was prescribed, smokers typically received just under half the amount of nicotine they would have received when they were smoking.

Clearly, there is a compelling need to improve our recognition of smoking status and the potential for nicotine withdrawal in our patients. Allen and colleagues' finding that nicotine replacement therapy significantly lowered agitation levels in smokers with schizophrenia is a wake-up call. Armed with this knowledge, clinicians, emergency departments, and psychiatric inpatient services have an imperative to provide systematized assessment and proactive treatment of nicotine dependence. It seems likely that decreased levels of agitation in patients with schizophrenia could lead to a reduced need for restraint and seclusion, fewer assaults and injuries, and lower dosages of medication for controlling agitation.

The authors are aware that their study has a number of limitations. It is a small study, with a total of 40 participants, and thus it needs to be replicated with larger samples and over a longer time frame. The finding that patients with higher levels of nicotine dependence did not respond as robustly at the fixed nicotine replacement therapy dose of 21 mg suggests that those patients may have required higher doses to achieve an anti-agitation effect. Future studies should examine the efficacy of nicotine dosages individualized to the level of nicotine dependence. Ideally, these studies would also include sites that do not have a dedicated psychiatric emergency service, in order to replicate the experience of patients who are treated in the many emergency departments that do not have this resource.

Allen and colleagues have made a significant contribution by bringing our attention to a frequently neglected aspect of emergency department and psychiatric practice. While their focus is on smokers with schizophrenia, one would expect that proactive treatment with nicotine replacement could lower levels of agitation in smokers with other psychiatric and substance use disorders as well. In addition, the benefits of nicotine replacement therapy for psychiatric patients who smoke are likely to go beyond measurable changes in agitation. Smokers who are not craving cigarettes and having physical manifestations of nicotine withdrawal are very likely to feel better. This improvement in patient experience, in addition to being an important end in itself, may have implications for the treatment alliance and for adherence with other recommended treatments.

References

1. Allen MH, Debanné M, Lazignac C, Adam E, Dickinson LM, Damsa C: Effect of nicotine replacement therapy on agitation in smokers with schizophrenia: a double-blind, randomized, placebo-controlled study. *Am J Psychiatry* 2010; 168:395–399
2. Committee on the Future of Emergency Care in the United States Health System, Board on Health Care Services, Institute of Medicine: *Hospital-Based Emergency Care: At the Breaking Point*. Washington, DC, National Academies Press, 2007

3. Hazlett SB, McCarthy ML, Londner MS, Onyike CU: Epidemiology of adult psychiatric visits to US emergency departments. *Acad Emerg Med* 2004; 11:193–195
4. Salinsky E, Loftus C: Shrinking inpatient psychiatric capacity: cause for celebration or concern? (National Health Policy Forum Issue Brief no 823). Washington, DC, George Washington University, National Health Policy Forum, Aug 1, 2007
5. US Government Accounting Office: Report to the Chairman, Committee on Finance US Senate: Hospital Emergency Departments: Crowding Continues to Occur, and Some Patients Wait Longer Than Recommended Time Frames (report no GAO-09-347). Washington, DC, April 2009. <http://www.gao.gov/new.items/d09347.pdf>
6. Boudreaux ED, Allen MH, Claassen C, Currier GW, Bertman L, Glick R, Park J, Feifel D, Camargo CA Jr; for the Psychiatric Emergency Research Collaboration: The Psychiatric Emergency Research Collaboration-01: methods and results. *Gen Hosp Psychiatry* 2009; 31:515–522
7. Owen C, Tarantello C, Jones M, Tennant C: Violence and aggression in psychiatric units. *Psychiatr Serv* 1998; 49:1452–1457
8. Calcedo-Barba AL, Calcedo-Ordóñez A: Violence and paranoid schizophrenia. *Int J Law Psychiatry* 1994; 17:253–263
9. Parrott DJ, Zeichner A: Effects of nicotine deprivation and irritability on physical aggression in male smokers. *Psychol Addict Behav* 2001; 15:133–139
10. Leonard S, Adler LE, Benhammou K, Berger R, Breese CR, Drebing C, Gault J, Lee MJ, Logel J, Olincy A, Ross RG, Stevens K, Sullivan B, Vianzon R, Virnich DE, Waldo M, Walton K, Freedman R: Smoking and mental illness. *Pharmacol Biochem Behav* 2001; 70:561–570
11. Prochaska JJ, Gill P, Hall SM: Treatment of tobacco use in an inpatient psychiatric setting. *Psychiatr Serv* 2004; 55:1265–1270

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