Available online at www.sciencedirect.com
ScienceDirect
Progress in Neuro-Psychopharmacology & Biological Psychiatry 32 (2008) 909–910
Progress In Neuro-Psychopharmacology & Biological Psychiatry
www.elsevier.com/locate/pnpbp

The Letter to the Editor

# Effects of divalproex on disruptive behavior of jail inmates

## 1. Introduction

The effects of valproate and other pharmacological interventions on aggressive behavior and violence have generated a great deal of interest in the correctional system because of the concern about maintaining order and preventing injuries in this closed setting. As a consequence several reports have advocated the use of anti-convulsant agents in correctional facilities (Monahan, 1992; Young and Hillbrand, 1995). However we have not been able to find any published studies in the past decade investigating the use of valproate or any other anti-convulsant medication to treat violent or disruptive behavior in correctional settings. We will present cases of inmates who received adjunctive divalproex after referral for psychiatric services because of disruptive behavior in a jail setting.

## 2. Case report

Seventeen inmates in a county jail were refereed for in-house psychiatric services and subsequently treated with divalproex. Their records were reviewed for disruptive behavior before and after divalproex was initiated. The mean age+/−SD of these inmates was (41.2+/−15.9). Thirteen were Caucasian (76%) and four were African American (24%). Eleven (65%) were male and six (35%) were female. Three (18%) received a primary diagnosis of schizophrenia, three (18%) bipolar affective disorder, four (23%) depression alone or with anxiety, four (23%) intermittent explosive disorder and three (18) % had seizure disorders. Twelve (71%) were taking an anti-psychotic, two (12%) were taking a different anti-convulsant, and eight (47%) were taking an anti-depressant. Nine (53%) were on one other psychotropic medication. Five (29%) were on two medications and three (18%) received at least three medications.

A psychiatric social worker reviewed the records and classified incidents as disruptive to self, others, or general. Disruptive to self included any action directed against the person such as hanging or stabbing oneself. Disruptive to others involved any action that may result in harm to another person, such as striking another inmate. The remaining incidents (not included in the analysis) were those not already classified, such as violence against property.

Overall, disruptive incidents showed a drop in number that was of borderline significance. For all incidents before divalproex, the mean was +/−SE=84.7+/−23.6 and after divalproex 40.0+/−18.6 ($p<.059$). When only the incidents against others were examined, a drop in number was seen that did not reach significance. The mean number of incidents before divalproex was 8.0+/−17.1 and after divalproex, 2.3+/−9.3 ($p>0.15$). Incidents directed against self showed a significant drop in number. The mean before the initiation of divalproex was 36.7+/−11.6 and after divalproex 16.8+/−7.2 ($p<.02$).

## 3. Discussion

The findings in this study are consistent with other reports showing that valproate is effective in reducing violent and disruptive behaviors in populations with diverse diagnoses (Wilcox, 1994). Surprisingly, reduction of behaviors directed against self reached significance but disruptive behaviors directed toward others did not. Absolute levels of both types of incidents were reduced and the lack of significance of the latter may have been due to inadequate power. Nevertheless divalproex appeared to be an effective adjunctive agent for some types of behavior in the correctional setting.

There is an impressive literature showing that lithium has anti-suicide effects consistent with its anti-depressant effects (Goodwin et al., 2003; Tondo et al., 1997; Worrall et al., 1979). The literature has shown a general effect of valproate on agitation or aggressive impulsivity toward others (Wilcox, 1994; Zayas and Grossberg, 1996). Anti-suicidal effects have been discounted (Goodwin et al., 2003). Recent studies have shown anti-depressive activity for divalproex which may account for the present finding of an effect on suicidal behavior. (Bowden et al., 2005; Davis et al., 2005). However these findings could easily be the result of its nonspecific effects on impulsivity and aggression.

## 4. Conclusion

Valproate may have efficacy in violent behavior, particularly behavior directed against self. We demonstrated that the efficacy of valproate may be shown in a correctional settings. The magnitude of the effect and the lack of research in this setting warrant further work with this population. The lack of studies is surprising since divalproex has replaced lithium as the most commonly prescribed mood stabilizer. (Goodwin and Goldstein, 2003) Moreover 50% of the prison population is estimated to be mentally ill. (Primm et al., 2005; U.S. Department of Justice, 2006). Additional double-blind studies are needed in this setting because of their public health significance.

0278-5846/$ - see front matter 
doi:10.1016/j.pnpbp.2007.06.011

## References

Bowden CL, Collins MA, McElroy SL, Calabrese JR, Swann AC, Weisler RH, et al. Relationship of mania symptomatology to maintenance treatment response with divalproex, lithium, or placebo. Neuropsychopharmacology 2005;30:1932–9.

Davis LL, Bartolucci A, Petty F. Divalproex in the treatment of bipolar depression: a placebo-controlled study. J Affect Disord 2005;85:259–66.

Goodwin FK, Fireman B, Simon GE, Hunkeler EM, Lee J, Revicki D. Suicide risk in bipolar disorder during treatment with lithium and divalproex. JAMA 2003;290:1467–73.

Goodwin FK, Goldstein MA. Optimizing lithium treatment in bipolar disorder: a review of the literature and clinical recommendations. J Psychiatr Pract 2003;9:333–43.

Monahan J. Mental disorder and violent behavior: perceptions and evidence. Am Psychol 1992;47:511–21.

Primm AB, Ogden FC, Gomez MB. Race and ethnicity, mental health services and cultural competence in the criminal justice system: are we ready to change? Community Ment Health J 2005;41:557–69.

U.S. Department of Justice. (2006). Mental Health Problems of Prison and Jail Inmates. U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics, Washington, D.C.

Tondo L, Jamison KR, Baldessarini RJ. Effect of lithium maintenance on suicidal behavior in major mood disorders. Ann NY Acad Sci 1997;836: 339–51.

Wilcox J. Divalproex sodium in the treatment of aggressive behavior. Ann Clin Psychiatry 1994;6:17–20.

Worrall EP, Moody JP, Peet M, Dick P, Smith A, Chambers C, et al. Controlled studies of the acute antidepressant effects of lithium. Br J Psychiatry 1979;135:255–62.

Young J, Hillbrand M. Carbamazepine lowers aggression: a review. Bull Am Acad Psychiatry Law 1995;22:53–61.

Zayas E, Grossberg G. Treating the agitated Alzheimer patient. J Clin Psychiatry 1996;57(suppl 7):46–51.

William B. Lawson*
Jean Nanos
*Department of Psychiatry,*
*Howard University*
*School of Medicine,*
*2041 Georgia Ave NW, Washington, DC 20060, United States*
*Corresponding author. Tel.: +1 202 865 6611 (voice);
fax: +1 202 865 6212.
*E-mail address:* wblawson@howard.edu (W.B. Lawson).

29 November 2006