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Aggression and psychopathology in treatment-resistant inpatients with schizophrenia and schizoaffective disorder

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Abstract

Positive psychotic symptoms, such as threat/"control-override" delusions or command hallucinations, have been related to aggression in patients with schizophrenia. However, retrospective data collection has hampered evaluation of the direct influence of psychopathology on aggressive behavior. In this study, we monitored aggressive behavior and psychopathology prospectively and in close temporal proximity in 157 treatment-resistant inpatients diagnosed with chronic schizophrenia or schizoaffective disorder participating in a 14-week double-blind clinical trial. Aggressive behavior was rated with the overt aggression scale (OAS). Psychopathology was assessed using the positive and negative syndrome scale (PANSS). At baseline, subjects who would be aggressive during the study had higher scores on only two PANSS items: hostility and poor impulse control. During the study PANSS positive subscale scores were significantly higher in aggressive subjects. Total PANSS scores were higher within 3 days of an aggressive incident, as were positive and general psychopathology subscale scores. However, in a smaller subsample for whom PANSS ratings were available within 3 days *before* aggressive incidents, only scores on the PANSS positive subscale were significantly higher. These findings in chronic, treatment resistant inpatients support the view that positive symptoms may lead to aggression.

Keywords: Schizophrenia; Aggression; Psychopathology

1. Introduction

Schizophrenia is associated with an elevated risk for aggressive behavior (Volavka, 2002), but the relationship between psychopathology and overt aggression is incompletely understood. Link et al. (1992) reported that severity of psychotic symptoms was significantly related to violence in the mentally ill. Threat/control override (TCO) symptoms (i.e., delusions of thought insertion, that one is dominated by external forces, or that people wish to do one harm) have been associated with violence (Link et al., 1998). However, two recent reviews of the literature on psychotic symptoms and violence (Bjørkly, 2002a,b) conclude that there is limited evidence directly linking TCO symptoms and violence.

That specific psychotic symptoms sometimes motivate aggression in some patients is not disputed, however consensus has not been reached either on the extent of their influence nor how they interact with other clinical or demographic factors. Several studies have indicated that psychotic symptoms are important determinants of aggressive behavior in mentally ill individuals. In Taylor's (1985) sample of psychotic offenders, the majority were actively psychotic at the time of the offense and, though only 20% reported that they were directly driven to offend by their psychotic symptoms, a delusional motive was considered probable for an additional 23% of the psychotic men. In addition, delusionally motivated offenses were more likely to have had serious consequences. Among patients with a

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history of delusions, 40% of those who had been violent retrospectively reported at least one violent incident that was probably or definitely motivated by a concurrent delusion (Junginger et al., 1998). In one small study, which focused on 25 individuals with persecutory delusions, 20% of the subjects reported recent aggression as "safety behaviours" (i.e., behavior carried out with the goal of reducing persecutory threat) (Freeman et al., 2001). Although no correlation was found between the presence of TCO delusions and violence in a prospective study of patients recently discharged from acute psychiatric care (Appelbaum et al., 2000), a significant association was observed when TCO symptoms of less than delusional severity were examined. McNiel et al. (2003) reported that "anger and suspicious, paranoid symptoms" were associated with increased violent behavior in psychiatric patients. In that study, community violence was retrospectively assessed by self-report but the assessments of psychopathology and mood were administered while the subjects were hospitalized.

Violent behavior in the community differs from violent behavior in the hospital in many respects; predictors of community violence such as gender, age and alcohol abuse appear to play a lesser role in inpatient aggression, where psychopathology may be more important (Steinert, 2002). In addition, it may be more feasible to study aggression prospectively in an inpatient setting. Cheung et al. (1997) compared 31 inpatients with schizophrenia who had been physically aggressive with 31 non-aggressive comparison subjects. They reported that aggressive patients had higher positive symptom, negative symptom, general psychopathology and total PANSS scores than non-aggressive patients. Steinert et al. (2000b) reported a significant association between severity of aggression during inpatient treatment and PANSS positive subscale at admission. In that study, neither negative subscale scores nor general psychopathology subscale scores were associated with aggression. Arango et al. (1999) examined PANSS scores obtained at hospital admission in patients who were or were not aggressive during the subsequent hospital stay. Patients who were subsequently violent scored higher on six out of seven PANSS positive subscale items, but only one negative subscale item (poor rapport) and three general psychopathology subscale items (uncooperativeness, lack of judgment and insight, and poor impulse control). In each of these studies, aggression and psychopathology were assessed at different times. A comprehensive prospective assessment of psychopathology in temporal proximity to aggressive incidents has not been published. The primary purpose of this paper is to provide such data.

These data were collected in the context of a study comparing the effects of clozapine, olanzapine, risperidone, and haloperidol in treatment-resistant inpatients with schizophrenia and schizoaffective disorder (Volavka et al., 2002). We have already analyzed the effects of these treatments on hostility (Citrome et al., 2001) and on acts of overt aggression (Volavka et al., 2004). The secondary analysis presented here was undertaken to more specifically examine the relationship between schizophrenic psychopathology and overt aggression.

2. Methods

Subjects were 157 inpatient participants in a 14-week prospective, double-blind trial conducted at four state psychiatric facilities (two in New York and two in North Carolina). Each subject provided written informed consent, after receiving a complete description of the study, according to the guidelines of the local Institutional Review Board. All met DSM-IV criteria for schizophrenia or schizoaffective disorder, were between the ages of 18 and 60, and had a minimum score of 60 on the PANSS at baseline. In addition, all subjects had a history of suboptimal treatment response, defined by two criteria, both of which had to be present at baseline: (1) persistent positive symptoms (either current or documented in the past) continuing after at least six consecutive weeks of treatment with one or more conventional antipsychotics at daily dosages equivalent to at least 600 mg of chlorpromazine and (2) poor level of functioning over the previous two years as indicated by lack of competitive employment or enrollment in an educational or vocational program and absence of age-expected interpersonal relationships involving ongoing regular contact outside the biological family. Study participants were randomly assigned to receive clozapine, olanzapine, risperidone, or haloperidol. Ninety-one subjects completed the 14-week study; the data reported here were derived from all available data for the 157 subjects who entered the study.

Aggressive behavior was monitored by research staff (nurses and study coordinators) during the study using the overt aggression scale (OAS) (Yudofsky et al., 1986), which categorizes aggressive behavior according to means of expression and object of aggression: verbal aggression, physical aggression against objects, physical aggression against self, and physical aggression against other people. Within each category there are four levels of severity, with weighted scores ranging from 1 (lowest level of verbal aggression) to 6 (physical aggression against self or other people, resulting in serious injuries). The OAS was completed for each episode of aggressive behavior during the study. All behaviors emitted in an episode were recorded. The overall severity of each aggressive incident was rated by summing the weighted score for the most severe behaviors within each category for an event (Silver and Yudofsky, 1991).

Incidents of overt aggression were ascertained retrospectively during a baseline period (up to 90 days pre-