The Connection between Cardiac and Mental Disorder: Atrial Fibrillation in Patients with Psychiatric Disorder

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Atrial fibrillation (AF) is the most common tachycardia in clinical practice, and is associated with an increased risk of cardiovascular complication and mortality. Several risk factors, such as old age, male sex, diabetes mellitus, hypertension, valvular disease, ischemic heart disease, heart failure, obesity, and elevated inflammatory marker concentrations have been proposed to increase the occurrences of AF, which contribute to high healthcare system utilization rates and socio-economic costs. Therefore, diagnosis and treatment AF is of substantial clinical value.

Social stigma and discrimination previously added to the disability in patients with psychiatric disorders and delayed the understanding of its associated comorbidities. Illness prevention and advancement of mental health strategies in Taiwan help to solve the issue of social exclusion and clarify the co-existing underlying diseases. In this issue of Acta Cardiologica Sinica, Yang et al. investigated the prevalence of AF in patients with schizophrenia and bipolar disorder, two of the most common psychiatric disorders, and shed light on the connection between heart and mental disorder. The study also elucidated the impact of gender factors on the occurrences of AF by using community-based National Health Insurance inpatient database. The authors demonstrated several interesting findings which may have an important impact on future surveys of AF in patients with psychiatric disorders.

THE PREVALENCE OF AF IN PATIENTS WITH SCHIZOPHRENIA AND BIPOLAR DISORDER

First, the present study demonstrated a different prevalence of AF in patients with psychiatric disorders. Patients with bipolar disorder displayed a higher prevalence of AF than did patients with schizophrenia and the general population. The incidence of newly diagnosed AF in patients with bipolar disorder was significantly higher than those in patients with schizophrenia and general population, which reflected the heterogeneous effects of different psychiatric disorders on the genesis of AF. In patients with schizophrenia, there were fewer new AF occurrences, which re-emphasized the lower incidence of AF in patients with schizophrenia and that different psychiatric disorders could have distinct manner on the occurrences of AF. The medical comorbidities, consistent with previous report, were significantly higher in patients with bipolar diseases than those with schizophrenia, which may cause the higher prevalence of AF in patients with bipolar disorder, as a manifestation of underlying system diseases.

THE INTERACTION BETWEEN GENDER AND PSYCHIATRIC DISORDER REGARDING THE OCCURRENCES OF AF

Aside from the above, the authors addressed a suggested gender difference in the occurrence of AF in patients with different psychiatric disorders, which demonstrated non-uniform influences. Because higher new AF occurrences were depicted in male patients with bipolar disorder, this supported the theory of a connection between gender, psychiatric disorder, and the occurrences of AF. Gender-related differences have been well-known in the field of psychiatric disorders, and also serve as a
pivotal factor resulting in distinct clinical presentation and outcome in AF. For instance, female gender with AF predisposed a patient to the presence of non-pulmonary vein (PV) triggers in origin and carries a higher risk of thromboembolic events. Animal studies also have demonstrated different electrophysiological properties between different genders, including response of isoproterenol in action potential in the PV and left atrial cardiomyocytes, which indicated that gender differences could have great impact on the arrhythmogenesis and clinical outcome in AF.

THE COMORBIDITY IN PATIENTS WITH PSYCHIATRIC DISORDER AND AF

According to some reports from psychiatrists, comorbidities are prevailing hallmarks of bipolar disorder rather than schizophrenia. The comorbidities between schizophrenia and bipolar disorder are variable, and these comorbidities could contribute to higher prevalence and occurrences of AF in patients with bipolar disorder in this study. Similar findings of higher cardiovascular diseases have been reported in patients with bipolar disorder. Future research is warranted to differentiate and recognize the types of comorbidities, the interaction with psychiatric disorder, and the genesis of AF.

PATHOPHYSIOLOGICAL MECHANISMS ON THE GENESIS OF AF

First, several neurotransmitters, including dopamine, norepinephrine (NE), and serotonin, have been shown to be involved in the pathogenesis of schizophrenia and bipolar disorder. For more than a century, debates persisted whether schizophrenia and bipolar disorder were two distinct mental disorders, or somehow were more connected. The exact mechanism for the discrepant prevalence of AF between schizophrenia and bipolar disorder remains questionable. Elevated NE signaling outside of the brain has been observed in patients with bipolar disorder but not schizophrenia, which might contribute to the genesis of AF. On the other hand, the balance of the autonomic nerve system was related to the occurrence of AF from animal models or clinical aspects.

Secondly, several drugs prescribed for psychiatric disorders, such as lithium, olanzapine and clozapine, have been reported to be associated with the genesis of AF. Elucidation of the arrhythmogenic effect of antipsychotic drugs on the prevalence of AF in patients with psychiatric disorder will be the next frontier ripe for a breakthrough.

In conclusion, Yang et al. addressed a critical issue in clarifying the prevalence of AF in patients with schizophrenia and bipolar disorder by a large nationwide database of Taiwanese population. The potential explanation included the underlying comorbidities, gender, neurotransmitters, and offending medication. These factors may have different effects on the occurrence of AF in psychiatric patients with different etiology, and warrant further investigation.

CONFLICTS OF INTEREST

None.

REFERENCES


