Serotonin Flags Progression of Heart Failure

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SAN DIEGO – Plasma levels of serotonin were significantly elevated in patients with decompensated systolic heart failure, compared with patients in the compensated state and with normal controls, according to a single-center study.

The finding suggests that serotonin has an active role in the progression of heart failure, researchers led by Dr. Ahmed M. Selim wrote in a poster at the meeting. "More studies should be done to test the sensitivity, specificity, and prognostic value of serotonin as a marker for congestive heart failure and to investigate the therapeutic benefits of the medications affecting this pathway," noted the researchers of the cardiology department at Albert Einstein College of Medicine, New York.

Dr. Selim and his associates collected plasma serotonin levels from 29 patients who were admitted with decompensated heart failure, 61 patients with stable heart failure, and 22 normal controls. They excluded patients on medications affecting serotonin receptors and those with pulmonary hypertension. All heart failure patients were on stable doses of medications and had left-ventricle ejection fractions of 40% or less; controls had a mean ejection fraction of 59%. Patients’ mean age was 55 years; 62% were male.

The mean serotonin level in controls was 2.4 ng/mL, vs. 4.1 ng/mL in the compensated group and 11.8 ng/mL in the decompensated group, independent of age, race, renal function, diabetes, and heart hypertension. "All results were highly significant," the researchers wrote.

The use of FANAPT should be avoided in combination with other drugs that are known to prolong QTc including Class 1A (e.g., quinine, procainamide) or Class III (e.g., amiodarone, sotalol) antiarrhythmics and psychotropic medications (e.g., chlorpromazine, thioridazine, antibiotics (e.g., tetracycline, tildoxan). or any other class of medications known to prolong the QTc interval (e.g., pimozide, intravenous sertraline). FANAPT should not be used in patients with congenital long QT syndrome and in patients with a history of cardiac arrhythmias.

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Certain circumstances may increase the risk of torsade de pointes and/or sudden death in association with the use of drugs that prolong the QTc interval, including (1) bradyarrhythmias, (2) hypokalemia or hypomagnesemia, (3) concomitant use of other drugs that prolong the QTc interval, and (4) marked hypokalemia or hypomagnesemia. Patients with a history of significant cardiovascular illness, e.g., QTC prolongation, recent acute myocardial infarction, uncompensated heart failure, or cardiac arrhythmia. FANAPT should be discontinued in patients who are found to have persistent QTc measurements >500 ms.

If patients taking FANAPT experience symptoms that could indicate the occurrence of a cardiac arrhythmia e.g., dizziness, palpitations, or syncope, the prescriber should initiate further evaluation, including cardiac monitoring.

5.3 Neuroleptic Malignant Syndrome (NMS)

A potentially fatal symptom complex sometimes referred to as neuroleptic malignant syndrome (NMS) has been reported in association with administration of antipsychotic drugs. Clinical manifestations include hyperpyrexia, muscle rigidity, altered mental status (including cataleptic signs) and evidence of autonomic instability (irregular pulse or blood pressure, tachycardia, diaphoresis, and cardiac dysrhythmia). Additional signs may include elevated creatine phosphokinase, myoglobinuria (rhabdomyolysis), and acute renal failure.

The diagnostic evaluation of patients with this syndrome is complicated. In arriving at a diagnosis, it is important to identify cases in which the clinical presentation includes both serious medical illness (e.g., pneumonia, systemic infection, etc.) and untoward side effects (e.g., drug fever). Thus, one must carefully evaluate the clinical signs and symptoms (EPS). Other important considerations in the differential diagnosis include central anticholinergic toxicity, heat stroke, drug fever, and primary central nervous system (CNCS) pathology.

The management of this syndrome should include: (1) immediate discontinuation of the antipsychotic drugs and other drugs not essential to concurrent treatment, (2) intensive symptomatic treatment (i.e., fluid and electrolyte monitoring, and (3) treatment of any concomitant serious medical problems for which specific treatments are available. There is no general agreement about specific pharmacological treatment regimens for NMS.

If a patient requires antipsychotic drug treatment after recovery from NMS, the potential reintroduction of drug therapy should be carefully considered. The patient should be carefully monitored, since recurrences of NMS have been reported in patients who demonstrate clinical symptoms consistent with NMS.

5.4 Tardive Dyskinesia

Tardive dyskinesia is a syndrome consisting of potentially irreversible involuntary movements, which may develop in patients treated with antipsychotic drugs. Although the prevalence of the syndrome appears to be highest among the elderly, especially elderly women, it is impossible to rely on prevalence estimates to predict, at the inception of antipsychotic treatment, which patients are likely to develop the syndrome. Whether antipsychotic drug products differ in their potential to cause tardive dyskinesia is unknown.

The risk of developing tardive dyskinesia and the likelihood that it will become irreversible are believed to increase as the duration of treatment and the total cumulative dose of antipsychotic administered increases, however, it is not known how much less commonly, after relatively brief treatment periods at low doses.

There is no known treatment for established cases of tardive dyskinesia, although the syndrome may remit, partially or completely, if antipsychotic treatment is withdrawn. Antipsychotic treatment itself, however, may suppress (or partially suppress) the signs and symptoms of the syndrome and thereby delay the resolution of the underlying process. The effect that systematic suppression has upon the long-term course of the syndrome is unknown.