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LETTER TO THE EDITOR

Intravenous fluid therapy in psychiatric inpatients

Yatan psikiyatrik hastalarda intravenöz sıvı tedavisi

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To the Editor,

An adequate daily fluid and electrolyte intake is essential to maintaining good health. The regulation of fluid and electrolyte balance is influenced by several factors including body size, physical activity, weather conditions and illness[1,2]. Directly or indirectly, almost every disease has the potential to affect this balance in the body[2]. A reduced intake of fluid during illness can disrupt the homeostasis, lead to a variety of health problems, and result in poor performance[1,2]. Given the composition and volume of body fluids within narrow limits of normal, homeostatic conditions must be reestablished in a malnourished patient following significant fluid deprivation[1]. The assessment and management of intravenous (IV) fluid and electrolyte therapy is a fundamental part of good patient care in the hospital[1,2].

Indeed, all body fluids are aqueous solutions that consist of solvent (water) and solute (electrolyte, i.e., sodium, potassium, chloride, proteins or other molecules dissolved in the water)[3,4]. The choice of fluids to be used in the IV fluid replacement therapy depends on the condition of the patient. There are different types of fluids that can be used in the IV fluid replacement therapy in certain disease states. Some IV fluids expand the intravascular volume resulting in an increase in the blood pressure. Other solutions contain dextrose which increases blood glucose levels and provides energy. Lactated ringer, which is most commonly used in trauma and surgery patients, is an isotonic crystalloid that contains sodium chloride, potassium chloride, calcium chloride, and sodium lactate in sterile water[5]. An isotonic sodium chloride solution at 0.9% concentration, also called physiological salt solution, is often used for rehydration[3]. Aqueous 5% dextrose solution contains dextrose, a form of glucose (sugar) as the solute for treating low blood sugar (hypoglycemia) and water as the solvent for treating dehydration[5].

Many psychiatric disorders including anxiety, depression, psychosis, and manic episode negatively affect appetite and nutritional intake and lead to loss of weight as a result. In this context, three different psychiatric cases are presented in this case report to draw attention to the importance of IV fluid therapy in psychiatric inpatients given the adverse effects of inadequate food and/or water intake.

Case Example 1: A 54-year-old woman, diagnosed with bipolar disorder at the age of 45, presented with catatonic features including immobility, mutism, negativism, and lack of water and food intake to the emergency department of the university hospital. Her medical history indicated that her symptoms began during pregnancy and continued in the postpartum period. She previously had two manic episodes and used valproic acid in combination with different antipsychotic agents such as olanzapine, risperidone or quetiapine.

IV Fluid Therapy: Prior to the administration of electroconvulsive therapy (ECT), infectious diseases and neurology departments were consulted in respect of differential diagnosis to rule out an organic disease such as encephalitis. The patient was given 1000 ml isotonic saline and 1000 ml 5% dextrose solutions

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daily as IV fluid therapy for the first three days of her inpatient treatment. The amount of her oral intake was gradually increased after she was administered ECT for the second time. In parallel, the amount of fluids she was given within the scope of IV fluid therapy was first decreased to 1000 ml/day in the following seven days, and stopped completely after she was administered ECT for the fifth time.

Case Example 2: A 33-year old woman who was in the 25th gestational week presented to the inpatient clinic with a prolonged major depressive episode with anxious distress features and suicidal ideation. Her symptoms included restlessness, diminished interest and pleasure, depressed mood, insomnia, poor oral intake, lack of energy, and impaired social functioning and quality of life. It was learned that her major depressive disorder relapsed after she stopped using sertraline (100 mg/day) which she has been using for depression for the last six years due to concerns over her pregnancy.

IV Fluid Therapy: Her symptoms did not regress despite 100 mg/day sertraline treatment continued for almost five months. Therefore, 15 mg/day mirtazapine and 1mg/day alprazolam were added to her treatment regimen. Her symptoms at admission included severe complaints of anxiety, restlessness, and agitation. In addition, her food intake was inadequate, and she often had nausea and vomiting. For this reason, she was started on IV fluid therapy. In this context, she was given 500 ml/day 5% dextrose solution in the mornings and 500 ml/day isotonic saline solution in the evenings for one week. Isotonic saline was continued for ten days.

Case Example 3: A 60-year-old man was brought to the hospital by his family with the complaints of social withdrawal, psychomotor restlessness, irritability, reduced speech, poor self-care, gratuitous fear of death of his relatives, insomnia, lack of appetite and markedly weight loss. These symptoms had started about 2 months ago and worsened within 2 weeks. An examination of his mental status revealed that he was nearly fully conscious, but had impaired attention-concentration and orientation, poor eye contact, prolonged reaction time, apathetic mood, nihilistic, delusional guilt and persecutory delusions, and lack of insight. Additionally, he appeared to be malnourished and dehydrated.

IV Fluid Therapy: In follow-up of the patient, he was started on 5 mg/day escitalopram, 7.5 mg/day aripiprazole and 10 mg/day donepezil based on the differential diagnosis of depression with psychotic features and dementia. In parallel, he was given 500-1000 ml isotonic saline and 500-1000 ml 5% dextrose solutions daily as the IV fluid replacement therapy for two weeks. After one month of inpatient treatment, he weighed 76 kg featuring a marked weight gain compared to 68 kg weight at admission.

Each patient must undergo a comprehensive psychological and physical examination by clinicians within the scope of inpatient psychiatric services. In order to determine the optimal treatment regimen, the initial psychiatric assessment should include recent changes in dietary habits, rate of weight loss, hydration, and other conditions that can affect dietary management such as diabetes and hypertension[2]. Appropriate IV fluid therapy may be considered for 7-10 days depending on the patient's condition. Changes in the body weight, urine color, and urine osmolality may offer cues to the need for rehydration[1,3].

Patients with severe psychiatric illnesses including schizophrenia, schizoaffective disorder, major depression, bipolar disorder and other mental disorders may need IV fluid therapy in the event of conditions such as lack of appetite, decreased oral intake, intake of foods with poor nutritional value, increased smoking, and low socioeconomic status[6]. It is well established that major depressive episodes are often characterized by markedly reduced appetite and decreased intake of food and water, particularly in those with catatonia, psychotic, anxious-distress, and melancholic features. Psychotic patients who have persecutory delusions for fear of poisoning may refuse to eat and lose substantial weight as a result. Dementia patients may frequently lose weight for a variety of reasons such as decreased appetite and food intake, hallucinations, delusions, depression, losing the ability to recognize food, feeding and swallowing apraxia, etc.[7]. These patients need to be given sufficient fluids, calories and electrolytes in order to maintain their weight and ensure an adequate nutritional status during the limited period they receive inpatient treatment.

It is a common practice in the clinic where this study was conducted to administer IV fluid therapy to patients in need of fluids often based on the consent of their relatives and in consultation with the internal medicine department to determine the type and amount of the fluids to be given within the scope of the IV fluid therapy. In addition, nutrition and dietetics department is consulted in order to support

the patient in receiving adequate food and water during the follow up period. In this context, this case report featured three such psychiatric cases who were administered IV fluid therapy with positive outcomes, demonstrating the importance of IV fluid therapy in psychiatric patients.

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