

TREATMENT OF A PATIENT WITH PSYCHOTIC DISORDER UNDERGOING HAEMODIALYSIS: A CASE REPORT

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SUMMARY

We report a case of a 35-year old male patient that was in treatment for chronic kidney failure for 20 years, with a personal history of unsuccessful kidney transplantation and undergoing continuous haemodialysis. He had to be treated psychiatrically for the first time because of exacerbation of psychotic symptoms. He was hospitalized twice in succession, because of the severity of the psychotic symptoms that included imperative auditory hallucinations that also led to a serious suicidal attempt. The prescribed psychiatric therapy had to be adjusted in type, dosage and especially the time of administration as his psychiatric status fluctuated every two days in sync with the wash-out of medication due to haemodialysis. The choice of adequate psychotropic medication in a haemodialysed patient is limited and the regime of the drug administration is also very important for the success of treatment and achieving remission.

Key words: psychotic disorder - chronic kidney failure – haemodialysis - antipsychotics

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INTRODUCTION

Psychotic symptoms may occur due to abnormalities of normal brain structure or function (i.e. organic illness), with underlying neurological, endocrine, or metabolic pathology, as well as due to medications, toxins or drugs of abuse (Semple & Smythe 2013). Excretory, endocrine and metabolic functions decline together in most chronic kidney diseases (CKD), and complications include drug toxicity, metabolic and endocrine malfunctions, increased risk for cardiovascular disease, and a variety of other recently recognized complications, including infections, frailty, and cognitive impairment (CKD Work Group 2012). High-risk groups for development of CKD include patients with diabetes, hypertension, cardiovascular disease, structural renal tract disease, multisystem diseases with potential kidney involvement such as systemic lupus erythematosus, family history of kidney failure, hereditary kidney disease, the elderly, those receiving potential nephrotoxic drugs or those opportunistically found to have hematuria or proteinuria (CKD Work Group 2012).

CKD can progress to end-stage kidney failure, which is traditionally considered as the most serious outcome of CKD and is fatal without artificial filtering (dialysis) or a kidney transplant (CKD Work Group 2012). Haemodialysis or haemoperfusion is used to replace impaired or absent kidney function, but also to remove many chemicals and drugs from the body, especially when dealing with intoxication, if decontamination processes and basic supportive care are unsuccessful, or specific antidotes are unavailable or non-applicable (Satar et al. 2006). In summary, dialysis is used to wash out waste products, toxins and xenobiotic substances.

In the available literature, the reports on administration of psychotropic drugs to the patients that must

undergo haemodialysis is quite limited. Available studies and case reports mostly present depressive disorders and antidepressants (Kimmel et al. 2007, Schlotterbeck et al. 2008, Raymond et al. 2008, Johnson & Dwyer 2008, Cooper et al. 2017). Yeh et al. studied the prevalence of the use of psychotropic drugs among patients on hemodialysis, and reported that of 195 patients, 24% fulfilled the DSM-IV criteria for major depressive disorder, but also that of the total patients 42.6% used benzodiazepines, 20.0% used hypnotics, 5.6% used antidepressants, 3.1% used mood stabilizers, and only 1.0% (i.e. 2 patients) used antipsychotics (Yeh et al. 2014). Antipsychotics prescribed to the patients on haemodialysis are mostly described via case reports (Railton et al. 2005, Jacob et al. 2009, Duarte et al. 2011, Soomro et al. 2014). According to the available literature, there are no guidelines for the prescription of antipsychotics for the patients on haemodialysis.

Hereby we present a case of a patient undergoing two decades of haemodialysis that has developed a psychotic disorder and needed an adjusted regime of administration of the psychotropic medication.

CASE REPORT

Our 35-year old male patient suffered a chronic kidney failure as a 16-year old boy. The reason for the disease could not be found (i.e. "e causa ignota"). He had to undergo a regular hemodialysis procedure ever since, with the exception of a few years, as he had a kidney transplantation at the age of 20. Later in the course, there were complications that were followed by a rejection of the kidney transplant, and he again had to undergo a regular three-times-a-week hemodialysis.

During one of his hospitalizations at the Department of Nephrology, he became extremely anxious, almost

mutacistic, unable to participate in a basic conversation, and his behaviour was altered and very odd. A liaison psychiatrist had prescribed him sertraline 25 mg q.d., and alprazolam 0.25 mg t.i.d., due to depression with anxiety symptoms. However, this therapy was not sufficient and in the next 5 days he was admitted to the Department of Psychiatry for the first time.

At the admission, the patient's sister described that he smashed the telephone into pieces because he was convinced that he is being spied upon, and a month prior that incident he believed that he is being followed and controlled via the internet. The patient confirmed being suspicious and having feelings of being threatened, but denied his sister's claims. He only reported having a horrible pressure in his chest. He was lucid and properly oriented in time and space, however, he was also nonspontaneous, incredibly tense, with a narrowed alertness and concentration, and with partially blocked thoughts. He denied having any hallucinations at that point in time, but confirmed hearing voices in the past. He appeared depressed in mood, but it was very hard to assess it properly, as he was so psychomotorically retarded and generally slowed down with a flat affect. At that time, he was not suicidal. In his physical examination, fistules for haemodialysis on his forearms and arms were quite prominent, his skin had a yellowish-brown (but not jaundice-like) discoloration also due to haemodialysis, and he had a 5 cm old post-surgery scarring above trachea (transplantation surgery). No other particularities in physical or neurological examination were found.

The patient was admitted to the Department of Psychiatry with a diagnosis of acute psychotic episode. During that hospitalization, he was nonspontaneous, poorly verbally responsive and generally psychomotorically retarded at all times. He was administered psychotropic medications, but he was not sedated and a psychomotor retardation due to medications was not the case. Clinically, he resembled a picture of a severely depressed patient. Additionally, he remained very tense and anxious, and due to his behaviour the staff had the impression that he had delusions and hallucinations, that he did not describe.

Subsequently, his sister additionally described how 14 days prior to the first psychiatric hospitalization the patient had discontinued the haemodialysis procedure almost 2 hours prematurely, as he was convinced that he is receiving poisons. Approximately 8 years prior to this episode, a similar episode happened due to hyponatremia, but the symptoms were alleviated upon correction of sodium concentrations, and no psychotropic therapy was needed.

The patient was prescribed aripiprazole 10 mg q.d., sertraline 50 mg q.d. and lorazepam 1.25 mg prn. He attended haemodialysis sessions regularly every second or third day. Only twice he initially refused the haemodialysis, but after some encouragement he complied and was not problematic at all.

For differential diagnostic purposes, the patient was presented to the psychologist that used BDI, LTB, RF, STROOP, TMT, and WB-II, and stated that at the moment of examination the psychotic symptoms completely dissolved, but the feelings of guilt and lighter depressive symptoms were maintained due to his somatic illness. His cognitive functioning was above average and according to the test results his psychomotoric functioning was completely intact. Basic laboratory tests, as well as thyroid hormones, were not pathological, whereas parathyroid hormone serum level was slightly elevated (as seen in haemodialytic patients). The endocrinologist did not find any pathological deviations. The CT scan has showed a 2 cm subarachnoidal cyst in his left temporoparietal region. The radiologist stated that it is probably due to an old and completely absorbed haematoma. In the neurosurgeon's opinion, this cyst did not compress the brain tissue, it did not require neurosurgical procedure, and in addition, it was highly unlikely that it is the underlying cause for his psychiatric symptoms.

After 20 days of hospitalization, the patient was dismissed from the Department of Psychiatry in a stable and satisfactory remission.

The patient resided in a small mountain town, and the local pharmacy could not supply aripiprazole immediately upon his dismissal from the hospital. Due to this unfortunate circumstance, the patient has discontinued the antipsychotic. Almost immediately, he started hearing voices that commanded him to inflict serious harm to himself, or else his family will die. He was trying to kill himself by banging his head with a hammer when his sister found him. This happened only four days after dismissal from psychiatry. His head injuries were initially treated at the Department of Surgery, and then he was re-admitted at the Department of Psychiatry.

The patient reported that he was feeling very good after dismissal from the hospital, but already after the first haemodialysis session, he became highly suspicious that the dialysis apparatus is flawed, and that he is receiving poisons intravenously. He became extremely anxious and scared. A while later he had heard voices commanding him to shoot himself with a gun or to smash his head with a hammer, which he then obeyed. He was mortified with the thought that all of his relatives will die, and he will be left all alone and unable to leave this world.

The patient was being readministered aripiprazole, sertraline and lorazepam. He was feeling better, became more relaxed, and he spoke more easily about his problems. Curiously, his psychiatric status fluctuated every second or third day. We could explain it only with the haemodialysis regime: the patient would receive his medication in the morning, after that he would go immediately to the dialysis, and later in the day he was feeling worse as opposed to the dialysis-free days. Previously, we overlooked that detail. Medication was actually being flushed out via dialysis, and hence, it was impossible to achieve a steady-state of antipsychotic and

antidepressant over time. Therefore, we searched for an optimal solution for the timing of the administration of psychotropic agents, and we adjusted it as follows:

- aripiprazole 15 mg after dialysis and around the same time on the non-dialysis days;
- sertraline 50 mg after dialysis or in the morning on non-dialysis days;
- lorazepam 1.25 mg in the morning and 2.5 mg in the evening.

With such an adjusted regime the patient soon achieved a better improvement and subsequently a stabilisation of his mental functioning. In the next 15 days, he was dismissed from the hospital with the diagnosis of Organic delusional (schizophrenia-like) disorder. Afterwards, he regularly visited the Outpatient Clinic. He was taking his medication following the suggested after-dialysis regime and remained in a stable remission, completely free of all psychopathological symptoms.

CONCLUSION

Our patient with a chronic kidney failure on haemodialysis and a psychotic disorder has shown a stable and progressive clinical improvement of psychopathological symptoms only after the adjustment of the administration regime of his psychotropic medication, i.e. taking into consideration his haemodialysis regime. Haemodialysis' repetitive regime imposes an additional challenge in achieving a steady-state of medication that needs to be tapered over more than two or three days, which is the case of antipsychotics and antidepressants. We suggest that it is very important not to overlook the specific circumstances of an individual patient, especially if the cumulative specific circumstances are very rare in occurrence and therefore, studying of larger samples of patients is difficult to conduct.

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