



# Acute Psychosis in an 18 Year Old Patient with Heart Failure and Suspected Renal Disease: A Case Report

Chikezie Uzoechi Eze<sup>1\*</sup>, T. E. Ambakaderemo<sup>2</sup> and Ebuenyi Ikenna Desmond<sup>2</sup>

<sup>1</sup>Department of Mental Health, Faculty of Clinical Sciences, Niger Delta University, Amassoma Bayelsa State, Nigeria.

<sup>2</sup>Department of Internal Medicine, Niger Delta University Teaching Hospital, Okolobiri Bayelsa State, Nigeria.

## Authors' contributions

All authors were actively involved in the management of the patient in this report. Authors CUE and TEA conceptualized the article and did most of the literature review. Author EID also contributed to the literature search and did most of the secretarial work and organization of the article. All authors read through and approved the final draft.

## Article Information

DOI: 10.9734/INDJ/2015/15570

### Editor(s):

(1) Vincenzo La Bella, Department of Clinical Neurosciences, ALS Clinical Research Center, University of Palermo, Italy.

### Reviewers:

(1) Anonymous, Japan.  
(2) Giuseppe Lanza, Department of Neurology I.C., "Oasi" Institute for Research on Mental Retardation and Brain Aging (I.R.C.C.S.), Troina (EN), Italy.

Complete Peer review History: <http://www.sciencedomain.org/review-history.php?iid=839&id=29&aid=7733>

Case Report

Received 4<sup>th</sup> December 2014  
Accepted 29<sup>th</sup> December 2014  
Published 10<sup>th</sup> January 2015

## ABSTRACT

Psychiatric disorders frequently coexist with medical illnesses. Most literature report on the occurrence of medical illnesses among patients with pre-existing psychiatric disorders. In this article we report the development of psychosis in a teenager who was being managed for multiple medical conditions (heart failure, suspected renal disease and scrotal sepsis). Illness factors and medication side effects are possible etiological factors for this. This case further emphasizes the need for adequate consultation liaison services in the management of persons with multiple medical morbidities.

**Keywords:** Acute psychosis; heart failure; renal disease; multiple co-morbidities.

\*Corresponding author: E-mail: [ezechikezie@yahoo.com](mailto:ezechikezie@yahoo.com), [nuellaokoro@gmail.com](mailto:nuellaokoro@gmail.com), [desiykee@yahoo.com](mailto:desiykee@yahoo.com);

## ABBREVIATIONS

*JVP – Jugular Venous Pressure; HDL – High Density Lipoprotein.*

## 1. INTRODUCTION

Some literatures have documented the important relationship between physical illnesses and psychiatric disorders; and it has also been suggested that the occurrence of psychiatric disorders increases with the chronicity of the physical illness [1,2]. The continuous debate on the mind/body dualism further adds to the intrigues involved in this relationship [3]. It becomes an important public health issue because people with co-morbid severe mental illnesses and physical illnesses have been found to die younger than equally matched cohorts with physical illnesses alone, showing mortality gaps of 10 – 18 years and 8 – 19 years for males and females respectively [4-8]. This increase in mortality rates has been linked to several possible risk factors such as illness-related factors, treatment-related factors and health – related behavior of those affected amongst others [9-11].

Several studies have elaborated on the frequent association of cardiovascular diseases and psychiatric disorders generally [12,13]. Depression and anxiety disorders are the most common. And common heart diseases in these associations are coronary artery disease, myocardial infarction and stroke. Some studies have reported depression and anxiety disorders ranging from 16 to 25% among patients with myocardial infarction, coronary artery disease and/or stroke [12-17]. The occurrence of psychiatric disorders among patients with heart failure has been less reported comparatively [15,18]. Also less reported is the presence of psychosis among patients with heart diseases in general and heart failure specifically [19,20]. Of important note is that most of the studies in literature are focused on the occurrence of heart diseases among persons who had pre-existing psychiatric disorders. Medication side effects and illness factors have been also implicated as possible reasons why patients with psychiatric disorders are more at risk of developing a heart condition compared to the general population [16,20].

Similarly, the association between renal diseases and psychiatric disorders has also been well established. Specifically, patients with end stage renal failure that are on dialysis or have recently

had renal transplantation have been documented to have frequent co-morbid psychiatric disorders such as depression and psychosis [21-26]. Use of steroids and other medications (amongst other factors) in patients with renal diseases has been suggested as possible reasons for increased incidence of psychosis among this population [21,23,25,26].

We report a case of an adolescent male who had underlying multiple physical illnesses (heart failure, suspected renal disease and suspected scrotal sepsis) and subsequently developed a psychiatric disorder. We also attempted to unearth possible causes of psychosis in this patient.

## 2. CASE PRESENTATION

K.G is an 18 year old male secondary school student who presented at the accident and emergency unit of the Niger Delta University Teaching Hospital (NDUTH) with generalized body swelling which started a week prior to presentation. It was insidious in onset, began at the abdominal region and after about two days progressed to involve both legs and the face. The facial swelling was worse in the morning but regressed as the day progressed. There was a positive history of oliguria 2 weeks prior to presentation. However, there was no history of dysuria, polyuria, nocturia, urinary frequency, hematuria and passage of dark-coloured urine, use of mercury containing soaps or sore throat.

There was a positive history of cough that was non-distressing, non-paroxysmal, non-productive and not associated with chest pain. There was a positive history of easy fatigability, dyspnea at rest, paroxysmal nocturnal dyspnea but no history of orthopnea. He had scrotal swelling of a month duration which was ulcerated and painful. There was no history of fever.

No polydipsia, polyphagia or jaundice. No blurring of vision, sleep disorders or dizziness. No vomiting, nausea, constipation or diarrhea.

He was admitted 2 years ago in the Federal Medical Centre Yenegoa, for complaints of generalized body swelling for which he was told he had a renal disease and was referred to the University of Port-Harcourt Teaching Hospital

(UPTH) for dialysis. The dialysis was not done due to financial constraints. He is not a known hypertensive, diabetic or sickle cell disease patient.

Examination revealed a young man with fluffy hair, who was in severe respiratory distress (respiratory rate was 42 cycles per minute). He was mildly pale, anicteric and afebrile (temperature 37.2°C). There was bilateral pitting pedal oedema and sacral oedema with anarsaca. No peripheral lymphadenopathy or finger/toe clubbing.

The abdomen was uniformly distended with no area of tenderness.

The liver was enlarged up to 14cm below the right subcoastal margin and the span was 18cm. The liver was smooth, non-tender, firm with well-defined edges. Spleen was not palpably enlarged and kidneys were not bimanually palpable. Bowel sounds were normoactive. Respiratory system examination revealed bibasal crepitations. On cardiovascular examination, pulse rate was 93 per minute (full volume and regular), blood pressure was 100/70 mmHg, JVP was not raised, apex beat was at the 6th left intercostal space, lateral to the mid clavicular line, not heaving. Heart sounds 1, 2 and 3 were heard.

Examination of the central nervous system did not show any abnormality.

Echocardiography showed moderate left ventricular systolic dysfunction with an ejection fraction of 36%, dilated inferior vena cava and intra-hepatic veins. Right atrium was mildly dilated. An assessment of biventricular failure was made.

Chest x-ray showed a globular heart, upper lobe diversion and interstitial edema. Abdominal ultrasound scan showed an enlarged liver with normal echo pattern, mildly dilated and prominent intra-hepatic veins. An impression of hepatic congestion was made.

Urinalysis, electrolytes/urea/creatinine, full blood count and clotting profiles values were all within normal range. Creatinine clearance calculated using the Cock-Croft Gault equation was 126 ml/min. Hepatitis and retroviral serology were normal. However, HDL cholesterol was elevated and genotype was found to be AS. Renal biopsy and histology were not done.

The working diagnoses for the patient were congestive cardiac failure secondary to dilated cardiomyopathy, suspected scrotal sepsis from scrotal ulceration and suspected nephropathy of unknown cause. His treatment included intravenous Frusemide 40 mg 12 hourly, tablets Clopidogrel 75 mg daily, tablets Spironolactone 25 mg daily, tablets Digoxin 0.125 mg daily, intravenous Ciprofloxacin 400 mg 12hourly and intravenous Metronidazole 500 mg 8 hourly.

Patient was doing well as evidenced by improvement in respiratory rate and other vital signs and reduction of dyspnea, orthopnea, paroxysmal nocturnal dyspnea and pedal edema. However, on the eight day of admission, he was noticed to be exhibiting some abnormal behaviour. He had irrational speech, was restless, refusing his medications and accused a doctor attending to him of planning to "suck his blood". More so, he was aggressive and disorderly.

The mental health unit was invited to review the patient. History revealed that this was the first episode of such behaviour in the patient's life. There was also no history of psychoactive substance use prior to admission or during admission. However, there was a family history of mental illness in a paternal uncle, although the details were not clear.

A diagnosis of resolving congestive heart failure secondary to dilated cardiomyopathy with acute organic psychosis was made.

Patient was subsequently placed on tablets Haloperidol 5 mg bd and tablets Diazepam 10 mg nocte in addition to other medications.

Patient showed significant improvement in his mental state a week later (15th day on admission) and symptoms of heart failure had resolved significantly. Patient was discharged on request of his mother on his medications with exception of Diazepam. He has been seen twice at follow up and has been stable and improving so far.

### 3. DISCUSSION

The patient had multiple medical co-morbidities for which he was receiving different types of medications and other treatments. From the history, he had been earlier diagnosed with a renal disease requiring dialysis. The exact renal pathology was not confirmed then and could not

be confirmed during the recent hospitalization either. This is mainly due to technical deficiencies and high cost of pathological diagnostic investigations which the patient's caregivers could not afford. Previously he was asked to go for dialysis (the Physicians could have thought he had renal failure), but he did not go due to distance of the dialysis centre and costs involved. Financial difficulties and poor distribution of health facilities have been recurrent factors limiting healthcare in this part of the world [27]. The electrolyte, urea and creatinine levels were surprisingly normal. This would not be expected if the patient really had chronic renal failure. However, clinical experience shows that laboratory reports are faulty a lot of times in this part of the world and most clinicians rely more on their clinical judgments in cases of such discrepancies. The patient could have had nephrotic syndrome or some other renal pathology not requiring dialysis. The presence of multiple medical co-morbidities could have had negative impact on the mental health of the patient. This can also be seen in literatures which have associated these conditions to mental health problems [1,2]. The patient could also have developed psychosis as an unwanted medication effect from the various medications he was given [6-8]. Individually, some of the medications have been associated with psychiatric syndromes like depression and anxiety. Collectively, the psychiatric manifestations of the drug interactions are yet to be confirmed or objectified. However, these could also have contributed to the development of psychosis. One possible argument against this hypothesis of drug induced psychosis could be that the psychotic symptoms resolved and did not recur despite the fact that the patient was still on those same medications. The patient has a family history of psychiatric illness, though the exact nature of the illness could not be ascertained. This could have predisposed him to developing a psychiatric disorder also. Hypoxaemia frequently associated with heart failure could also be linked to the onset of a psychotic disorder in this patient though we could not find any literature on that association. Also, the symptoms of heart failure were already improving before the patient developed psychosis. If hypoxaemia was responsible, it would have been expected that psychosis would be part of the features at presentation. The exact cause of psychosis could be a combination of factors. It becomes clear from this case that physicians managing patients with multiple medical co-morbidities must be vigilant to

possible development of psychiatric morbidities. They must pay attention to the possible effects of drug combinations often used in the management of such patients.

#### **4. LIMITATIONS OF THIS REPORT**

The inability to perform all the needed investigations and possible unreliability of some investigations made firm diagnosis of the patient's possible co-morbidities very difficult.

#### **5. CONCLUSION**

Psychiatric disorders often coexist with medical illnesses, especially those that run chronic, painful courses. The presence of additional psychiatric morbidities tends to lower the quality of life and treatment outcomes for these patients. Thus, attending physicians should be alert to these possibilities and work closely with psychiatrists when the need arises because 'there is no health without mental health' [28].

#### **CONSENT**

All authors declare that written informed consent was obtained from the patient and his mother at discharge before this report.

#### **ETHICAL APPROVAL**

The authors declare that ethical permission for this report was obtained from the ethics committee of the NDUTH.

#### **COMPETING INTERESTS**

Authors have declared that no competing interests exist.

#### **REFERENCES**

1. Lexa W Lee. Significant Associations between Mental Illness and Chronic Physical Illnesses. Medscape; 2007.
2. The Relationship between Mental Health, Mental Illness and Chronic Physical Conditions Canadian Mental Health Association; 2008. Accessed on October 24 2014.  
Available:[http://ontario.cmha.ca/public\\_policy/the-relationship-between-mental-health-mental-illness-and-chronic-physical-conditions/](http://ontario.cmha.ca/public_policy/the-relationship-between-mental-health-mental-illness-and-chronic-physical-conditions/)

3. Mind and Body. Accessed on October 24, 2014. Available:[www.blutner.de/philom/mindbody/mind\\_body\\_dualism/pdf](http://www.blutner.de/philom/mindbody/mind_body_dualism/pdf)
4. Crump C, Sundquist K, Sundquist J. Comorbidities and mortality in persons with schizophrenia: A Swedish national cohort study. *Am J Psychiatr*. 2013;170:324–333.
5. Henderson M, Hotopf M, Imran S, Hayes RD, Kuh D. Psychiatric disorder in early adulthood and risk of premature mortality in the 1946 British Birth Cohort. *BMC Psychiatr*. 2011;11(1):37. DOI:10.1186/1471-244X-11-37.
6. Lawrence D, Hancock KJ, Kisely S. The gap in life expectancy from preventable physical illness in psychiatric patients in Western Australia: Retrospective analysis of population based registers. *BMJ*. 2013;346:25-39.
7. Chang C-K, Hayes RD, Perera G, Broadbent MTM, Fernandes AC, Lee WE, Hotopf M, Stewart R. Life expectancy at birth for people with serious mental illness and other major disorders from a secondary mental health care case register in London. *PLoS ONE*. 2011;6(5):e19590.
8. Laursen TM, Munk Olsen T, Vestergaard M. Life expectancy and cardiovascular mortality in persons with schizophrenia. *Curr Opin Psychiatr*. 2012;25(2):83–88.
9. Woodhead, et al. Patterns of physical co-/multimorbidity among patients with serious mental illness: A London borough-based cross-sectional study. *BMC Family Practice*. 2014;15:117.
10. Kemp DE, DeHert M, Rahman Z, Fyans P, Eudicine JM, Marler SV, Baker RA, Carlson BX. Investigation into the long-term metabolic effects of aripiprazole adjunctive to lithium, valproate, or lamotrigine. *J Affect Disord*. 2013; 148(1):84–91.
11. Scheen AJ, De Hert MA. Abnormal glucose metabolism in patients treated with antipsychotics. *Diabetes Metabol*. 2007;33(3):169–175.
12. Schulman JK, Maslan PR, Shapiro PA. Psychiatry and cardiovascular disease. *Focus*. 2005;3:218-224.
13. Newcomer JW, Hennekens CH. Severe mental illness and risk of cardiovascular disease. *JAMA*. 2007;298:15.
14. Rudisch B, Nemeroff CB. Epidemiology of comorbid coronary artery disease and depression. *Biol Psychiatry*. 2003;54:227-240. [CrossRef] [PubMed]
15. Faris R, Purcell H, Henein MY, Coats AJ. Clinical Depression is common and significantly associated with reduced survival in patients with non-ischaemic heart failure. *Eur J Heart Fail*. 2002;4:541-551.
16. Glassman AH, Shapiro PA. Depression and the course of coronary artery disease. *Am J Psychiatry*. 1998;155:4-11.
17. Luutonen S, Holm H, Salminen JK, Rislä A, Salokangas RK. Inadequate treatment of depression after myocardial infarcti. *Acta Psychiatr Scand*. 2002;106:434-439.
18. Freeland KE, Carney RM, Davila-Roman UG, Rich MW, Skala JA, Jaffe AS. Major depression and survival in congestive heart failure. *Psychosom Med*. 1998;60:118.
19. Nauert R. Psychosis and cardiovascular disease. *Psych Central*; 2007. Retrieved on October 25, 2014. Available: <http://psychcentral.com/news/2007/02/08/psychosis-linked-with-cardiovascular-death/608.html>
20. Brugada J. Psychosis, depression and high risk for sudden cardiac death: Time for cooperation between Psychiatrists and Cardiologists. *Eur Heart J*. 2012;33(6):687-688. DOI:10.1093/eurheartj/ehr405
21. Abott KC, Agodoa LY, O'Malley PG. Hospitalized psychosis after renal transplantation in the United States: Incidence, risk factors and prognosis. *JASN*. 2003;14(6):1628-1635.
22. Kimmel PL, Thamer M, Richard CM, Ray NF. Psychiatric illness in patients with end-stage renal disease. *Am J Med*. 1998;105:214–221.
23. Kimmel PL, Weihs K, Peterson RA. Survival in hemodialysis patients: The role of depression. *J Am Soc Nephrol*. 1993;4:12–27.
24. Blazer DG 2nd, Petrie WM, Wilson WP: Affective psychoses following renal transplant. *Dis Nerv Syst*. 1976;37:663–667.
25. Lee PC, Hung CJ, Lei HY, Tsai YC. Suspected acute post-transplant neuropsychosis due to interaction of morphine and cyclosporin after a renal

- transplant [letter]. Anaesthesia. 2000;55:827–828.
26. Watnick S, Kirwin P, Mahnensmith R, Concato J. The prevalence and treatment of depression among patients starting dialysis. Am J Kidney Dis. 2003;41:105–110.
27. Jack-Ide IO, Makoro BP, Azibiri B. Pathways to mental health care services in the Niger Delta region of Nigeria. J of Research in Nursing and Midwifery. 2013.2(2):22-29.
28. Department of Health: No health without mental health. London: TSO; 2011.

© 2015 Eze et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*

*The peer review history for this paper can be accessed here:*  
<http://www.sciencedomain.org/review-history.php?iid=839&id=29&aid=7733>