Hyponatremia induced Takotsubo cardiomyopathy

HYPONATREMIA INDUDED TAKOTSUBO CARDIOMYOPATHY: A CASE REPORT

Makumbaba R*, Makumba Y

1. Lusaka Medical Center, Lusaka, Zambia

Correspondence
Dr Rodensa Makumbaba
Lusaka Medical Center, Lusaka, Zambia
E-mail: rodensamak@gmail.com


ABSTRACT

Low blood sodium is an important laboratory finding in clinical practice. This condition is known as hyponatremia. The hyponatremia is can cause several clinical problems especially for problems on neurological system such as seizure. hyponatremia related Takotsubo cardiomyopathy is a rare cardiac complication of hyponatremia. In the present report, the authors present a case of hyponatremia related Takotsubo cardiomyopathy.

Keywords: Hyponatremia, blood, Takotsubo cardiomyopathy

INTRODUCTION

Low blood sodium is an important laboratory finding in clinical practice. This condition is known as hyponatremia. The hyponatremia is can cause several clinical problems especially for problems on neurological system such as seizure. The alteration of blood osmolarity due to depletion of sodium is the main pathophysiological process. The other effect of hyponatremia is little mentioned in the literature. Regarding the disturbance of electrophysiology, the hyponatremia usually cause no effect. Nevertheless, there are some recent reports on the rare condition of hyponatremia related Takotsubo cardiomyopathy. This condition is uncommon but it might occur. In the present report, the authors present a case of hyponatremia related Takotsubo cardiomyopathy.

CASE REPORT

The present case report is a 55 years old male patient presented to the physician with a chief complaint of a short period of unconsciousness. The patient noted that his wife observed that he had loss a consciousness for a while. His wife also gave additional history that the patient also had seizure during loss of consciousness. This patient is a known case of diabetes mellitus for 10 years and on oral metformin. The patient also has impaired renal function due to poorly controlled diabetes mellitus.
In this visit, the laboratory investigation was done and the abnormal blood electrolyte was observed. The blood electrolyte results of this patient were sodium = 115 mEq/L, potassium = 3.6 mEq/L, chloride = 84 mEq/L and carbon dioxide = 23 mEq/L.

In this patient, electrocardiography examination was done and the result showed anteroseptal infarction pattern (Figure 1). The patient was finally diagnosed to have hyponatremia related Takotsubo cardiomyopathy and was treated by sodium chloride intravenous infusion. The patient returned normal with normal electrocardiography finding within 2 days.

Figure 1. Electrocardiography appearance of the patient.

DISCUSSION

In the present case, the patient has the abnormal blood electrolyte results as hyponatremia and hypochloremia. The patient finally developed neurological presentation as loss of consciousness and seizure. In addition, the abnormal electrocardiography finding, hyponatremia related Takotsubo cardiomyopathy, was also detected.

In fact, hyponatremia usually result in neurological complication. The cardiac complication is little mentioned in the literature. Hyponatremia related Takotsubo cardiomyopathy is a possible cardiac complication that should be recognized. Clinically, Takotsubo cardiomyopathy is a kind of stress induced cardiac problem. There are several possible stress factors that might induce Takotsubo cardiomyopathy. Hyponatremia is a possible rare stress that can cause Takotsubo cardiomyopathy. For management of the patient with Takotsubo cardiomyopathy, early diagnosis and getting rid of the causative problem is the rule. The present case was successfully managed by correction of hyponatremia by sodium chloride intravenous infusion. This is concordant with previous report that there is a good response to electrolyte correction in hyponatremia related Takotsubo cardiomyopathy. It can show that the important take-
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Home note from the present case study is the recognition of the practitioner to the possible problem and the effective use of laboratory investigation for early diagnosis of electrolyte imbalance of the patient.

CONCLUSION

The present case report is on a patient with hyponatremia and further developed Takotsubo cardiomyopathy.

CONSENT

The authors obtained written informed consent from the patient for the publication of this article.

COMPETING INTERESTS

The authors declare for no conflict of interest.

REFERENCES