

## Hypovolemic Shock Related to Sepsis. Case Report

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### Abstract

The subject of the case study is a ninety-four-year-old female from Saudi Arabia. She was admitted to the hospital due to presentation of sepsis which is secondary to urinary tract infection that was found and reported to be resolved. However, other underlying health issues were revealed when the patient started vomiting and showed signs of hypotension in addition to watery diarrhea. In addition to the past medical history of high blood pressure, ischemic heart disease, diabetes mellitus and being a bedridden.

**Keywords:** *Hypovolemic , sepsis , shock.*

## Introduction

In a bid to obtain the best outcomes in field of medicine and nursing, it is essential for practitioners to consider all the necessary elements. Having a good background of the health condition as well as the necessary counter measures is often a good step towards enhancing positive client experiences. The essential elements include the medical history of a patient, possible causes of the current health issue and finally the remedial practices which can be applied in a bid to contain the situation in case it is not curable. Other healthcare measures may include administering preventive approaches to minimize future impacts of the situation. In case of a curable disease, the practitioner can work on ways of eliminating the obstacle. These steps are only possible when all the necessary records and details are availed by the patient.

## Discussion

This case study report is a comparative analysis of hypovolemic shock and septic shock which is secondary to Urinary tract infection in a patient of 94 years. The article also includes recommendations for the possible solutions to the issue under discussion. The subject of the case study is a ninety-four-year-old female from Saudi Arabia. She was admitted to the hospital due to presentation of sepsis that was found and reported to be resolved.

However, other underlying health issues were revealed when the patient started vomiting and showed signs of hypotension in addition to watery diarrhea. It is important to note that the patient as for the history has been diagnosed with the condition of high blood pressure, ischemic heart disease, diabetes mellitus along with the fact of being bedridden that are all very linked to each other as comorbidities. The patient was found to have a diagnosis of resolved sepsis along with hypovolemic shock due to dehydration. On the assessment of the patient, she was found to be lacking orientation and also alertness but was on the overall, conscious. The blood pressure of the patient was found to be as low as 128 by 50 and the heart rate of the patient was found to be extremely high. The patient had tachycardia with the pulse rate of 122 beats per minute. The normal range

of the oxygen saturation is ninety-five to hundred percent and the oxygen saturation of the client was found to be within the mentioned range, that is 96 per cent. On abdominal assessment, there was tenderness that was found over the region of the abdomen and is important to note. The clinical signs and the symptoms are critical to be noted and that is why, the comprehensive nursing assessment is very critical to the nursing care and nursing process as a whole. The cardiovascular and the general assessment along with the abdominal assessment by the nurses found out the critical symptoms and signs of the patient that were indicative of acute condition of sepsis. The history of the present illness had resulted from various factors leading to the development of the urinary tract infection that is important and also vital to consider [1]. Moreover, it is important to note that the history of the patient that is of hypertension, diabetes mellitus, ischemic heart disease and bedridden are all indicative of an underlying metabolic disturbance. Diabetes on a long-term basis leads to the chronic kidney disease and makes the kidney more prone to the infections and other issues that in turn increases the chances of contracting the same. This increases the prevalence rate of sepsis which has the pathophysiological etiology of the patient. Moreover, high blood pressure plays a major role in the development of the cardiovascular risks and complications and the patient already has been diagnosed with ischemic heart disease that is an important clinical finding. With respect to the present findings, the above-mentioned pathophysiological changes due to diabetes mellitus, high blood pressure and also ischemic heart disease is clearly being expressed in the clinical signs and symptoms. This is a highly important correlation that is to be understood [2]. As the person, as hypertension issues, the presenting hypotension as an acute nursing problem can be resulting from a number of causes that is to be investigated properly. Under the effect of hypertension reducing drugs, the hypotension can be caused but with respect to this cause, the resulting hypotension has a number of other reasons as well. Loss of blood volume, loss of water volume from the blood is a cardinal cause of hypotension and in this case of the ninety

five-year-old woman, the latter is the main cause [4]. Decrease in the blood volume due to the dehydration has resulted in the development of the hypotension that has led to the development of the increased heart rate. Tachycardia is generally caused by the psychological mechanism that attempts to correct the blood volume through the increasing of rate of the heart. Although the patient was admitted with the case of sepsis, the further investigations found out a lot of issues in the patient that is vital to comprehend [3]. Left side pleural effusion along with cardiomegaly was found out in the X-ray investigation adding to the issues of fluid accumulation in the body. Moreover, abdominal computed tomography scan led to the finding of bowel ischemia and cortical cyst was reported in the upper pole of the kidney that was an important finding as well [5]. As per the laboratory reports, the readings were sodium 140, potassium 3.79, Urea 20.80, WBC -12.83 and Hb 8.20, Plt was found to be 343.

Sepsis is a complicated consequence that follows the infection caused in the urinary tract, when not controlled effectively with the proper tools and with the proper clinical management. With age, it is important to understand that the immune system become more and more weak leading to the development of infections as the opportunistic infections sets in, more with the advancement of the age. Moreover, as in this case study, the age of the patient is 94 years, she is at the risk of more infection that people of other age groups. Moreover, the upper pole cyst in the kidney has also increased the rate of the risk being posed with respect to the development of the kidney infection [6]. Diabetes mellitus is associated with the cardiovascular risks has resulted in the development and progression of functional and the structural damage in the kidneys that has resulted in the causation of issues as well. All these factors along with natural degeneration and functional loss of the kidneys due to age has increased the opportunity for the infections to set in the urinary tract of the patient [7]. Once, the infection is in the bloodstream, the chemicals that generally released by certain important defense structures in order to combat the infection, in this case, leads to adverse reactions in the body. This can even lead to sentinel

events and the causation of the multiorgan failure. Sepsis, under the framework of a standard clinical diagnosis is characterized by a number of signs and symptoms. These are such as the shortness and difficulty in breathing, increase of rate of heart beats resulting in tachycardia and also the increased issues with low blood pressure that is known as hypotension. There are changes in the mental functioning parameters as well as because there is an increased issue with acute confusion and it is to be noted in this case report, that the aged patient has had all the same symptoms. However, the treatment with the medication ceftriaxone 2 mg OD for 14 days lead to the addressing of the main and major symptoms that is important to consider. Intravenous therapy was given to the patient in order to address the hypovolemic shock that has resulted from the dehydration [8]. Even for the recovery of the patient from signs and the symptoms of the sepsis, the patient developed the hypovolemic shock which has chiefly due to lack of risk management skills of the nurses. Lack of clinical supervision was another important reason that lead to the development of the hypovolemic shock following the septic shock that developed the problem of the hypotension further. While the term urosepsis is highly relevant to this case as because the infections from the urinary tract went pathologically to the kidneys leading to the development of sepsis and then caused the cascade of adverse reactions to occur.

The sepsis as pathophysiological process progresses through the stage of sepsis, severe sepsis and ultimately septic shock that is the most difficult stage to manage [9]. Moreover, the antibiotics such as the metronidazole and vancomycin were given to the patient in order to manage the infection in the body that worked out, in a clinical manner. It is to be noted that Enoxaparin was given to the patient as because the patient was bed ridden for a long period of time and this increased the very risks of deep vein thrombosis. This can lead to the development of major clinical risk complications such as the pulmonary thromboembolism that can be life threatening for the patient who is of old age. That is DVT or deep vein thrombosis prophylaxis is important and thrombolytic therapy is an important part of the clinical care. Moreover, the patient also

had the issues of pulmonary effusion, that increased the chances of intravenous clots [10]. These management was equally so important that of the sepsis management by the nurses which was caused by the underlying cause of the urinary tract infection. Aspirin was given as cardiovascular protective and to treat both the symptoms of inflammation and also the sign of fever, both of which are significant elements of the sepsis as an acute medical condition.

### Conclusions

Thus, it can be said that the complex consequence of the urinary tract infection can lead to severe presentation of an acute condition such as sepsis. With respect to that of the patient however, the signs and the symptoms reacted to the urinary tract infection and urosepsis was effectively managed. But however, the lack of risk identification and lack of effective clinical supervision by the nurses resulted in the development of complex problems in the aged patient. The clinical deterioration of the patient was marked by the development of severe hypovolemia and hypotension caused by the dehydration. This was a complication of the sepsis and the issues of pleural issues added to the nursing problems even after the resolution of the sepsis.

### Recommendation.

Based on the outcome above, it is recommended that the patient who is suffering from bot hypovolemic and septic shock ought to be placed on Intensive Care Unit management and bed for close assessment and monitoring.

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