# Critical Thinking Case

## Question 1

Insulin is a component in the body that is produced by the pancreases to regulate the levels of glucose in the body to meet energy needs. It enables the body to use the use energy in contained in glucose or store it for future use. Inadequate insulin is the most basic defect for the growth of DKA because the levels of glucose increase in the bloodstream causing the cells to starve (Mills & Stamper, 2014).

## Question 2

Looking at Ms. S’s case, the development of DKA may have been increased by her infection, gram-positive cocci. Gram-positive cocci is known to influence anxiety and illness that can interfere with the normal release of hormones. As a result, the same hormones affect the release of insulin as well. As for Ms. S, it is obvious that the insulin was deficient which lead to the accumulation of glucose in the bloodstream (Gosmanov, Gosmanova & Dillard-Cannon, 2014).

## Question 3

* Classic signs and symptom of DKA:
* Headache
* Malaise
* High levels of glucose in the bloodstream
* Nausea and potential vomiting
* Dehydration and fatigue in critical conditions.

The characteristics of Ms. S’s DKA condition include vomiting, increased sugar levels in the blood, and ketones in glucose to denote dehydration among others. The pathophysiologic cause of DKA is associated with the fact that Ms. S had a history of diabetes and hypertension. This also influences the development DKA.

## Question 4

An anion gap is the discrimination between the cations and anions present in the blood. When an individual is deficient of glucose, the onion gap will increase. As such, the anion gap is used in DKA to indicate acidosis levels when it is difficult to view the same using a patient’s ABG. An increase in onion gap signifies acidosis, which means DKA is present. As the onion gap decreases, it means the sugar levels are reducing thus the metabolic acidosis is diminishing relatively (Gosmanov, Gosmanova & Dillard-Cannon, 2014).

## Question 5

The acid-base disturbance in Ms. S’s case is a metabolic acidosis. This is evident by the fact that she the lung is releasing COR as indicated by the increase in RR levels.

## Question 6

The primary diagnosis for Ms. S includes determining the patient’s history, examining the clinical signs, conducting a physical examination and isolating the causative agents. This is essential to achieve a clinical isolation of the patient’s metabolic acidosis to determine the DKA status (Gosmanov, Gosmanova & Dillard-Cannon, 2014). The goals for treatment include aggressive care to maintain fluid balance and accomplish a consecutive treatment for concurrent infection. Evidence-based interventions for collecting fluid loss are imperative to initiate immediately to increase the chances of improving patient outcomes (Mills & Stamper, 2014). Further, within the next 24 hours, it is advisable to correct hyperglycemia associated with insulin to decrease the chances of ketosis recurrence (Hamersley, 2011).

## Question 7

Insulin deficiency is the main lab abnormality associated with DKA. Therefore, a patient in DKA may either have deficient and increased amounts of counterregulatory hormones (Mills & Stamper, 2014). This may lead to exaggerated levels of leukocyte count. This abnormality is attributed to maniac stress and dehydration due to fluid loss (Hamersley, 2011).

## 8. What nursing considerations are important in planning Ms. S&rsquo;s discharge?

The following nurse factors must be accounted for in planning for Ms. S and rquo’s discharge. They include assessing the patient admission records to clarify a patient fit for discharge (Yong, Moore & Lunt, 2014). Then inpatient assessment is vital to determine a proper customized plan for discharging that patient. Then provide adequate interventions especially for personal care. This will maintain the achievement of better health outcomes (Yong, Moore & Lunt, 2014).

## References

Gosmanov, A. R., Gosmanova, E. O., & Dillard-Cannon, E. (2014). Management of adult diabetic ketoacidosis. *Diabetes, metabolic syndrome and obesity: targets and therapy*, *7*, 255.

Mills, L. S., & Stamper, J. E. (2014). Adult diabetic ketoacidosis: Diagnosis, management and the importance of prevention. *Journal of Diabetes Nursing*, *18*(1).

Savage, M. W., Dhatariya, K. K., Kilvert, A., Rayman, G., Rees, J. A. E., Courtney, C. H., ... & Hamersley, M. S. (2011). Joint British Diabetes Societies guideline for the management of diabetic ketoacidosis. *Diabetic Medicine*, *28*(5), 508-515.

Yong, K. W., Moore, M. P., & Lunt, H. (2014). Medically facilitated discharge of adult diabetic ketoacidosis admissions: precipitants and average length of stay. *The New Zealand Medical Journal (Online)*, *127*(1392).