

6<sup>th</sup> Global Diabetes

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## Acid base problems in diabetic ketoacidosis

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Diabetic ketoacidosis (DKA) is an acute and potentially fatal complication of diabetes typically characterized by hyperglycaemia, ketone body formation and metabolic acidosis. The accumulation of ketoacids in the extracellular fluid leads to a loss of bicarbonate anions and a gain of ketoacid anions. The relation between the increase ( $\Delta$ ) in the plasma anion gap and the decrease ( $\Delta$ ) in the plasma bicarbonate concentration which is commonly referred to as delta-delta ( $\Delta$ - $\Delta$ ) is used to provide an estimate of the magnitude of the acid load and to detect the presence of coexisting metabolic acid-base disorders. The use of sodium bicarbonate to treat acute metabolic acidosis is controversial. Acute reversal of acidemia with bicarbonate has been linked to worsening of tissue hypoxia. And the possible association of bicarbonate therapy with the development of cerebral edema in DKA, cannot be overlooked. But bicarbonate therapy may be justified by the initial favorable outcome in patients whom large component of the acidemia is due to hyperchloremic metabolic acidosis. Also, in patients expected to have a low rate of ketoacid removal (i.e., patients who have a marked decrease in their level of consciousness or those with preexisting advanced renal dysfunction [estimated GFR, <30 ml per minute]). Current consensus being, bicarbonate should not be administered in patients with diabetic ketoacidosis unless the arterial plasma pH falls below 6.90, and bicarbonate concentration is <5 mmol per liter (especially in children).

## Biography

Dinesh Gupta Professor and Head, Department of Medicine at Dayanand Medical College and Hospital, Ludhiana (Punjab, India), with 23 years of teaching experience, 20 publications in National and International journals. Treasurer of APICON-2014 (Association of Physicians of India Conference held at Ludhiana in 2014), Vice Chairperson of Indian Academy of Clinical Medicine Conference to be held at Ludhiana from 9-11 October, on Editorial Board of book 'Medical Update for Post Graduate Doctors', to be published on eve of APICON 2016 at Hyderabad, member scientific committee APICON 2016, Chairman of Clinical Audit and sentinel events task force of the hospital, Member of Molecular Committee of Pharmacy at the hospital.

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