A167 - Influence of complications of diabetic ketoacidosis treatment on length of stay at Intensive Care Unit

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Introduction:
Aim of study was to estimate the rate of hypokalemia and hypoglycemia as diabetic ketoacidosis (DKA) treatment complications, relate them also insulin interruption and use of sodium bicarbonate (NaH$_2$CO$_3$) with length of stay (LOS) in ICU.

Methods:
Analysis of retrospective cohort study data of 120 patients (pt) treated for DKA at ICU of Kaunas Clinics during 2014 - 2019 has been carried out. Serum kalemia, glycemia; hypokalemia, hypoglycemia episodes; rate of insulin interruption for hypo- and normoglycemia during ketoacidosis; use of NaH$_2$CO$_3$ for ketoacidosis, and LOS in ICU were analysed. SPSS 23.0 was used for statistic calculations. Traits evaluated as significant at p < 0.05.

Results:
At the beginning of DKA treatment in totally hypokalemia (3.1 ± 0.3 mmol/l) was recorded in 64/120 pt (53.3 %). Due to ignoring of blood pH (6.8 - 7.3 (7.0 ± 0.1) kalemia was falsely misinterpreted as “normo-“ or “hyper-“ 3.5 – 7.1 (5.1 ± 0.9 mmol/l) in 49/68 pt (72.1 %), thus disregarded so complicated by obvious hypokalemia additionally in 26/49 pt (53.1 %). In hypokalemia LOS in ICU was 52.9 ± 29.7 vs 32.8 ± 18.6 h, p < 0.05. Insulin use has caused hypoglycemia (1.2 – 3.3 (2.5 ± 0.7 mmol/l)) in 22/120 pt (18.3 %), LOS in ICU 63.2 ± 38.5 vs 38.9 ± 21.2 h, p < 0.05. Insulin use was interrupted in case of normo- and hypoglycemia with still persisting ketoacidosis in 39/120 pt (32.5 %), LOS in ICU was found to be 56.5 ± 30.7 vs 37.0 ± 22.5 hr, p < 0.05. NaH$_2$CO$_3$ was given for symptomatic treatment of ketoacidosis during first 10 h of DKA in 33/120 pt (27.5 %) with stable hemodynamic: HCO$_3$ buffer has increased (4.8 ± 3.3 - 7.9 ± 3.1 mmol/l), p < 0.05, but it didn’t control ketoacidosis, and LOS in ICU was 55.2 ± 27.5.2 vs 39.1 ± 25.6 h, p < 0.05.

Conclusion:
Hypokalemia, hypoglycemia, precocious interruption of insulin use were recorded as complications of DKA treatment. All of them have prolonged LOS in ICU. Symptomatic treatment of ketoacidosis with NaH$_2$CO$_3$ had no effect on it, and prolonged LOS in ICU as well.