

Euthyroid sick syndrome in children presenting with diabetic ketoacidosis

Rıza Taner Baran^a, Hüseyin Demirebilek^a, Munevver Dundar^a, Mulkiye Aydın^a, Remezan Demir^b, Mustafa Karatas^b, Funda Tas^b, Kahraman Oncel^b, Mehmet Nuri Özbek^a

^aPaediatric Endocrinology, Diyarbakir Children's State Hospital, Diyarbakir, Turkey; ^bPaediatrics, Diyarbakir Children's State Hospital, Diyarbakir, Turkey

BACKGROUND and OBJECTIVES

Euthyroid sick syndrome (ESS), also known as non-thyroidal illness or low T3 syndrome, is defined as low T3, low/normal T4 and inability of rise in TSH due to extrathyroidal diseases. Any severe condition resulting stress such as infectious diseases, sepsis, metabolic disorders and severe malnutrition can associate to ESS. Clinician usually screen patients presented with type 1 diabetes mellitus (T1DM) for other autoimmune diseases including autoimmune thyroiditis from the blood samples collected at presentation. Diabetic ketoacidosis (DKA) is characterised with metabolic decompensation that produces a profound stress. The aim of the present study is to evaluate the development of ESS in patients with T1DM who presented with DKA in comparison to whom presented without DKA.

PATIENTS and METHODS

Patients presented with T1DM at the Diyarbakir Children's State Hospital Paediatric Endocrinology Clinic between the year 2011-2013 were included. Thyroid function tests (TFT), blood gases analysis, leucocyte count and C-reactive protein (CRP) level were measured at the time of the presentation.

CONCLUSION

ESS was more prevalent in patients who presented with DKA. Of which all became euthyroid with no need of treatment. Having or not having infection at presentation has not statistically significant impact on the development of ESS. These results suggested to postpone the evaluation TFT's till recovery of DKA.

RESULTS

Study included 83 patients (47 females) with T1DM. The mean age of the diagnosis was 8.8 4.2 years (range:0.5-17 years). Number of patients who had DKA at presentation was 54(65.1%). In total 38 out of 83 (45.8%) patients had ESS. The frequency of ESS in patients with DKA (n=32/54; 59.3%) was higher than those of patients without DKA (n=6/29; 20.7%) (p<0.0001). The frequency of ESS in the patients with elevated CRP (46.1%) was not statistically different from those of patients with normal CRP (43.9%) (p=0.887). In all patients who had ESS at presentation, TFT's recovered to normal range during follow up with no need of thyroid hormone replacement.

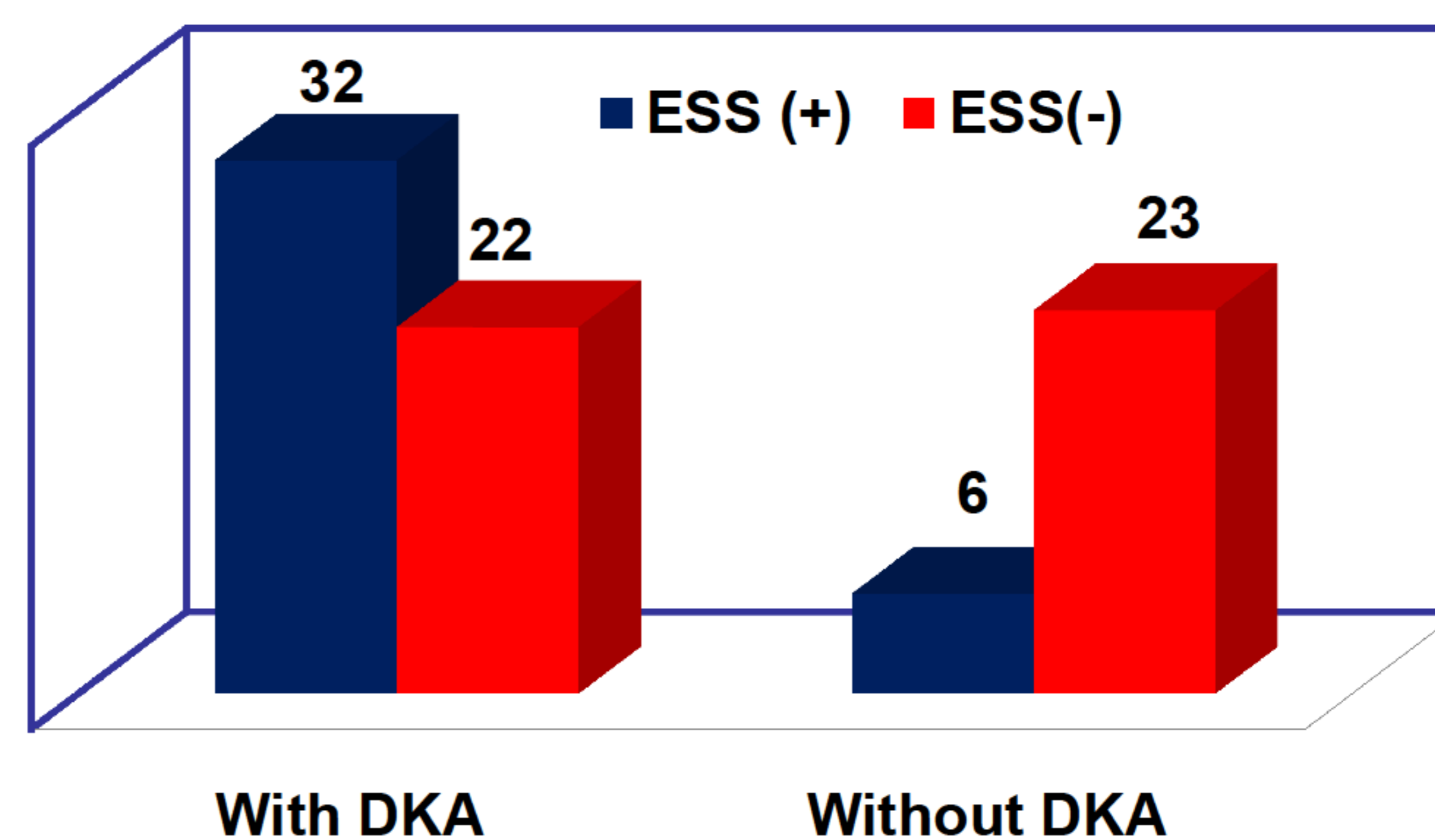


Figure 1. ESS frequency in patients with and without DKA at the time of the presentation

