

Diabetes Ketoacidosis Recovery in Newly Diagnosed and Established Youth with Type 1 Diabetes

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INTRODUCTION

At present, treatment for DKA is the same in both newly diagnosed and established patients with T1DM.

AIM

- To examine and describe the differences in metabolic parameters & time-to-recovery from DKA, between those groups.
- We hypothesized that established T1DM patients would respond faster to treatment for DKA.

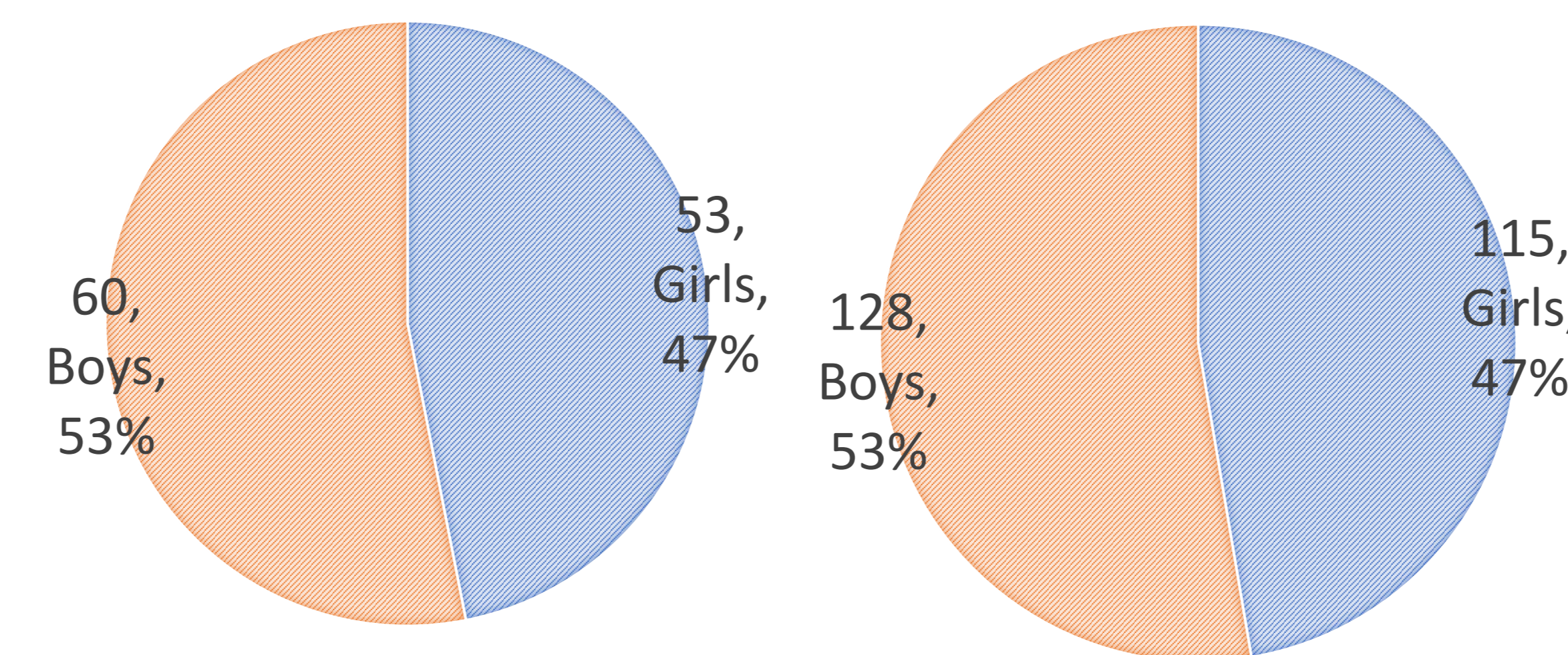
METHOD

A single center, retrospective study Cohort comprised 356 patients (405 DKA episodes) during 2008-2018

RESULTS

- The mean time to resolution of acidosis was significantly longer in patients with newly diagnosed (13± versus 8.5± hours) (p<0.001).
- PH at presentation did not differ between the groups.
- Bicarbonate at presentation was significantly lower in patients with newly diagnosed diabetes, 9.9± versus 12± mmol/L (p<0.001).
- Potassium and phosphorus levels were lower, and sodium and chloride levels were higher in patients with newly diagnosed diabetes (p<0.001).
- For each severity category, DKA recovery was shorter among those with established than new onset diabetes. (Figure 1)

Established Diabetes Group Newly Diagnosed Group



Laboratory data comparison according to DKA timing

	Newly diagnosed N=243, DKA Events=243	Established Diabetes N=113, DKA Events=162
Time to resolution of DKA (hrs)	13.0 (8.0,18.1)	8.5 (4.8,12.9)
HbA1C (%)	12.6 (11.0,14.0)	9.3 (8.5, 10.6)
Creatinine max (mg/dl)	0.45 (0.36,0.57)	0.61 (0.51,0.73)
Urea max (mg/dl)	29.0 (23.0, 35.0)	43.0 (36.0, 50.0)
Chloride max (mg/dl)	112.0 (110.0,116.0)	108.0 (105.0, 111.0)
Sodium max (mg/dl)	140.0 (138.0,141.0)	138.0 (136.0,140.0)
Phosphorous min (mg/dl)	2.2 (1.6,2.8)	3.2 (2.5,3.9)
Potassium min (mg/dl)	3.3 (3.0,3.6)	4.1 (3.8,4.3)
PH at presentation	7.2 (7.1,7.2)	7.2 (7.1,7.2)
Bicarbonate at presentation	9.9 (6.7,12.6)	12.1 (8.9,15)

*The values are presented as medians (interquartile ranges)

Age at DKA Diagnosis (yrs)

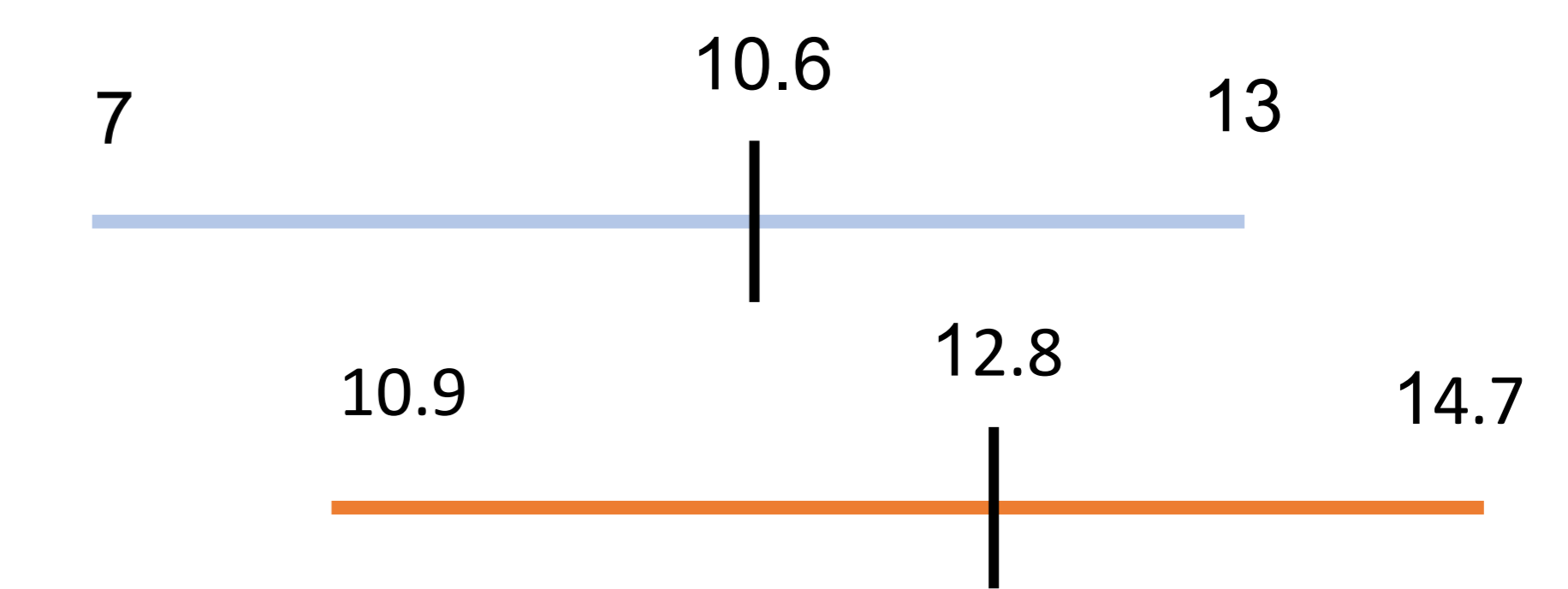
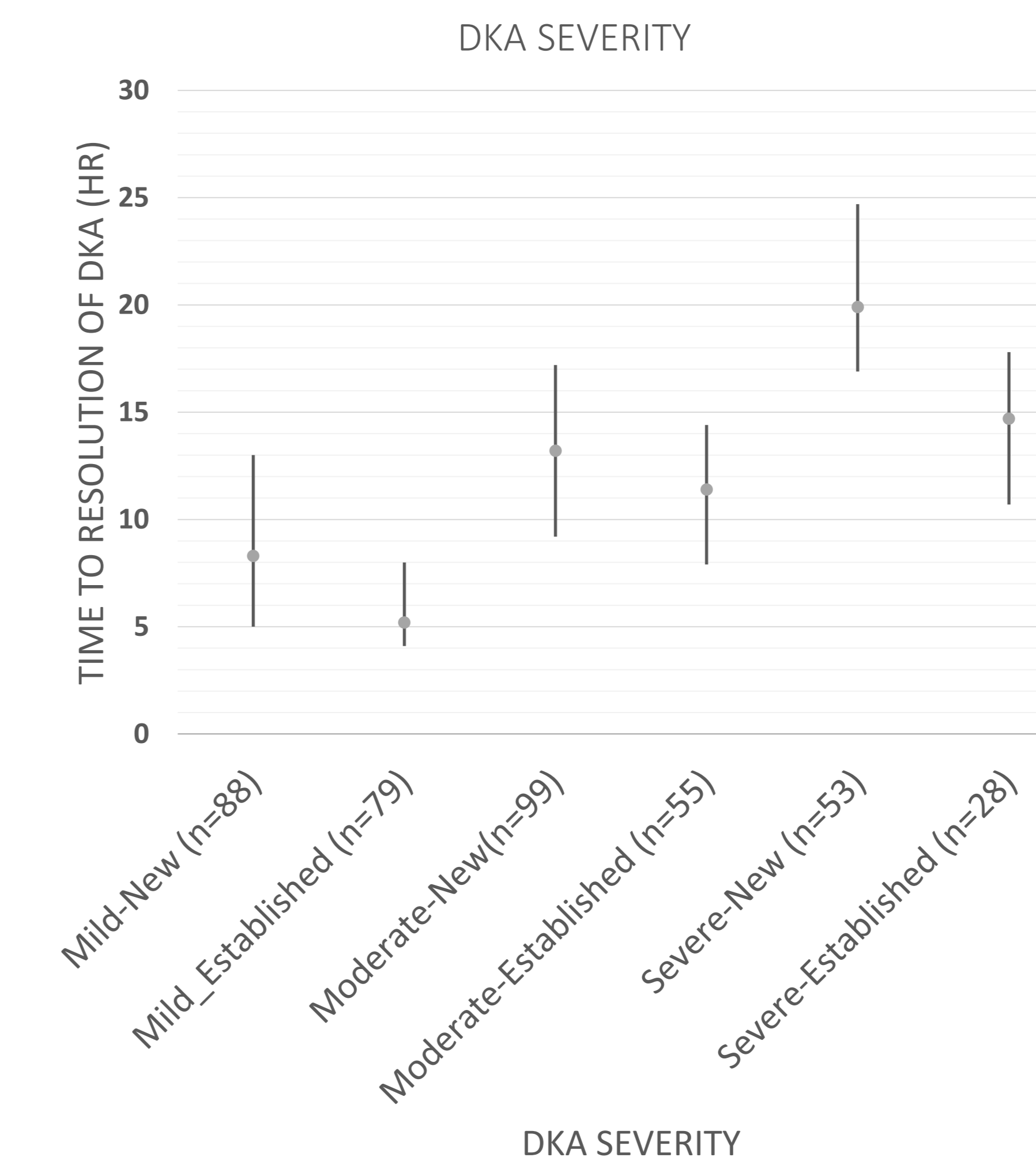


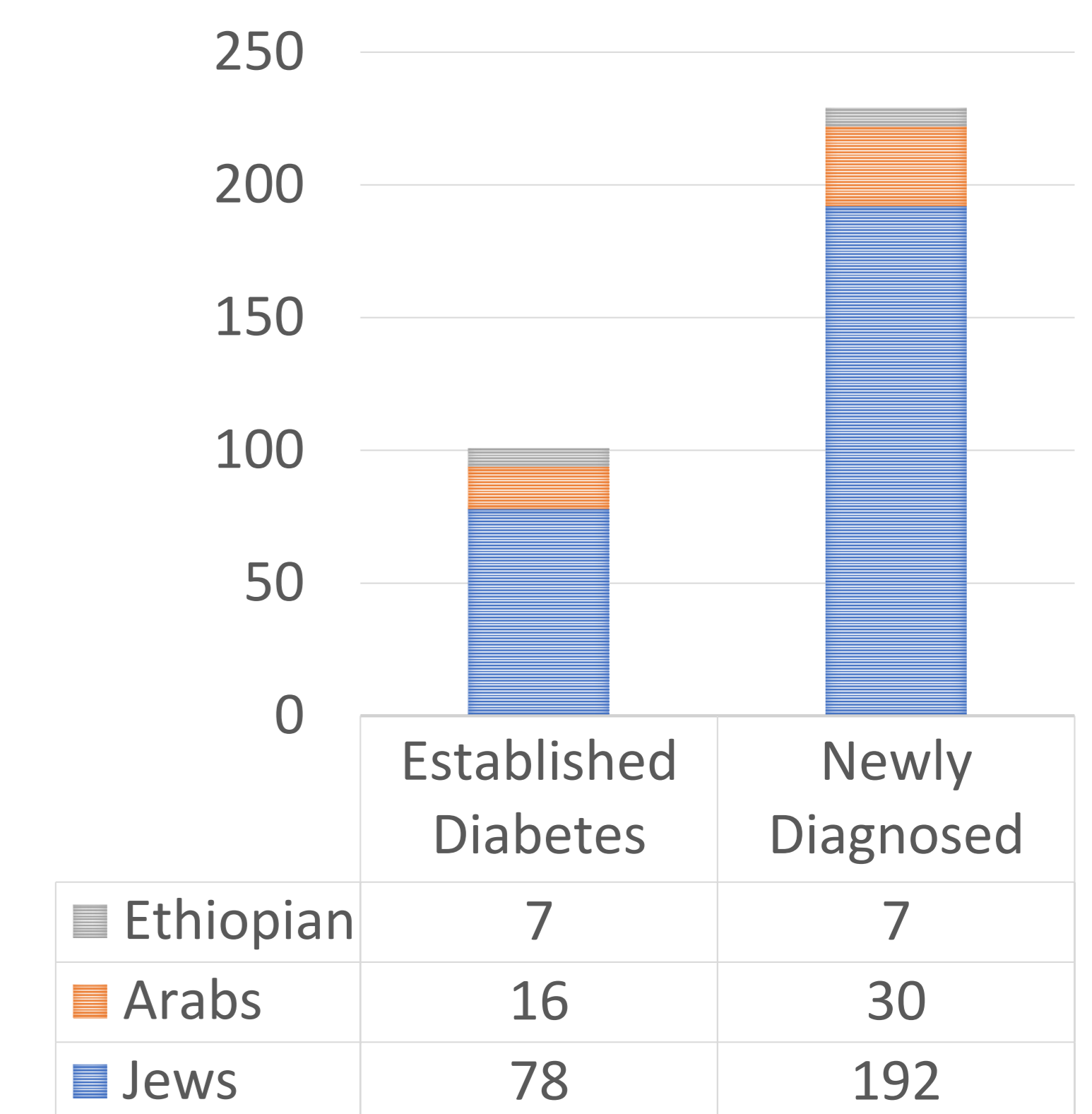
Figure 1- Time to resolution of DKA according to the severity and timing of diabetes ketoacidosis (DKA) (at onset and during the course of diabetes)



*P<0.01 Moderate P<0P values, Mild & sever .05

*The lines represent the range and the dots represent the mean.

ETHNICITY



CONCLUSIONS

- DKA in patients with established T1DM is associated with shorter recovery time than in patients with newly diagnosed diabetes, regardless of the severity of the DKA
- This may have implications on the treatment of patients with established diabetes:
 - shorter intravenous treatment, with the possibility of less complications.
 - consider treatment in the emergency room or faster replacement with subcutaneous insulin.

CONTACT INFORMATION

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