

Optimal regimens of the basal-bolus insulin therapy in adolescents with diabetes mellitus of type 1

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INTRODUCTION

To achieve the optimal glycaemic control in adolescents with type 1 diabetes mellitus (DM1) is a difficult task. The reason is a low compliance of teenagers caused by psychoemotional peculiarities as well as decreased insulin sensitivity due to a physiologically high concentration of contrainsular hormones (androgens, growth hormone, etc.)^{1,2,3}.

OBJECTIVES

This study was aimed to determine peculiarities in regimens of the pump insulin therapy that are necessary for achieving treatment goals in adolescents with DM1.

RESULTS

Compared with patients in group 2, adolescents in group 1 had significantly higher average total daily dose of insulin, average daily dose of basal insulin ($p=0.038$, $p=0.019$) (Fig. 1).

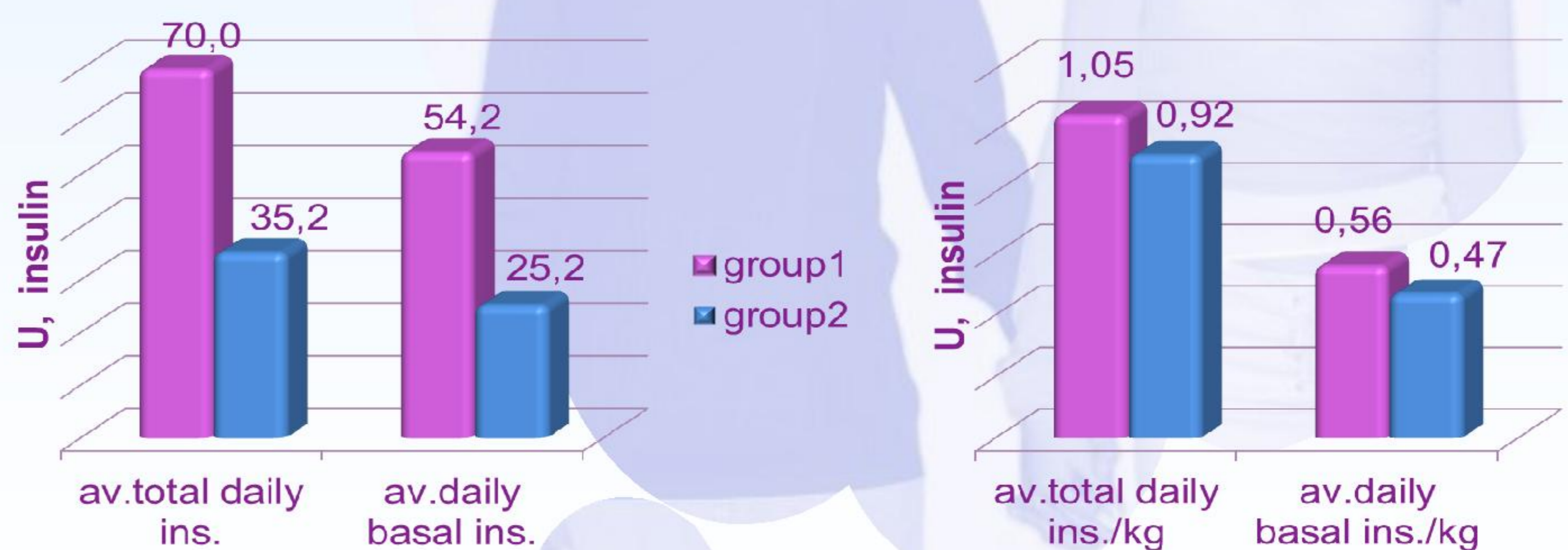


Figure 1. Average daily dose of insulin in patients group 1 and group 2.

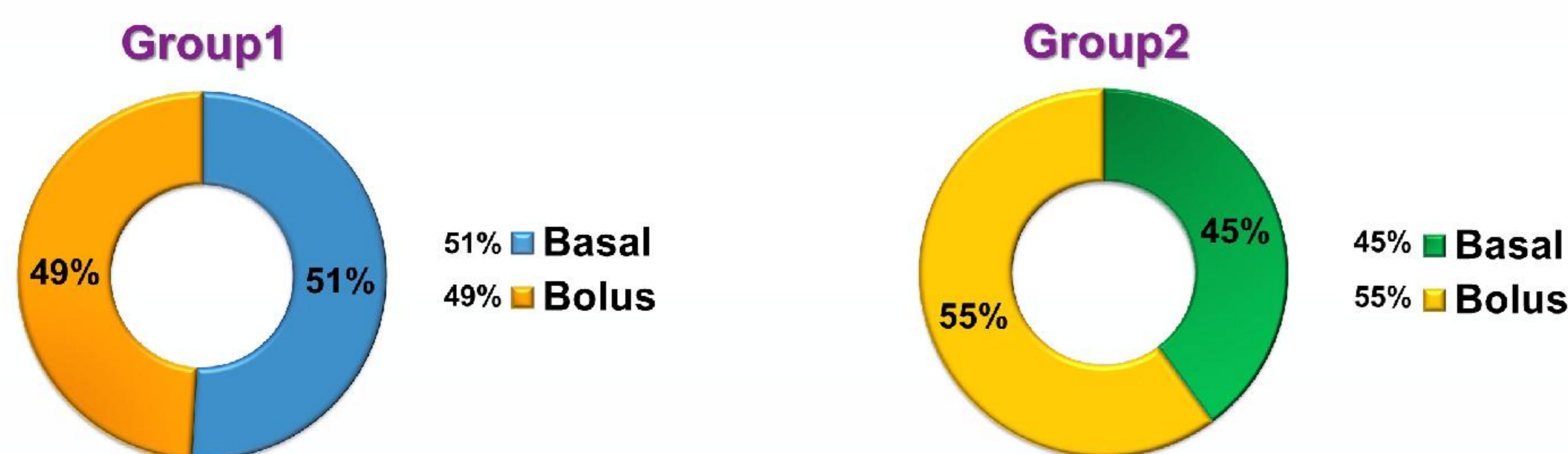


Figure 2. Average basal-to-bolus ratio in patients group 1 and group 2.

RESULTS

The average basal-to-bolus ratio from group 1 patients was 51/49%, compared with group 2 patients - 45/55% (Fig. 2)

Prevalence of bolus insulin in adolescents with poorly controlled DM1 was caused by frequent use of correction boluses in order to lower postprandial hyperglycemia resulting from the excessive intake of carbohydrates.

Group 2 patients had a low level of skills which did not allow them to use additional functions of the pump.

A large part of group 1 patients adapted pump settings on their own according to their individual peculiarities, physical activity, etc.

CONCLUSIONS

Thus, well-balanced basal-to-bolus ratio in adolescents on CSII, which can provide improvements in blood glucose management is 51/49%. An important condition is also a high level of compliance and skills of patients, intention to control actively the disease.



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