

INTRODUCTION

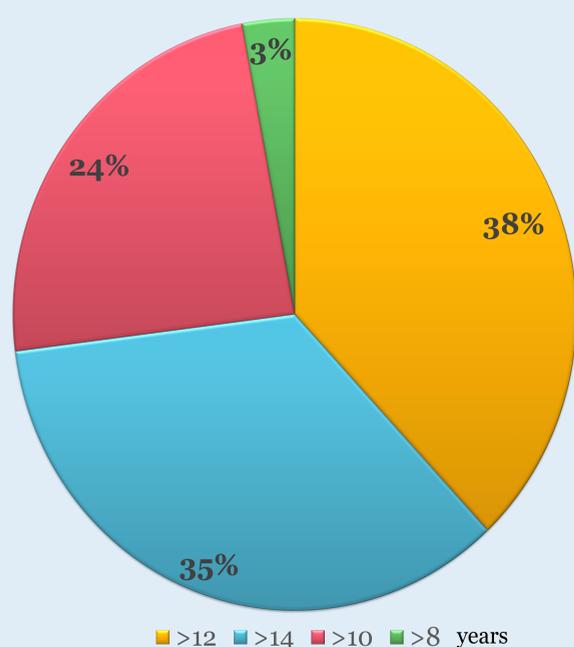
• Many Muslim adolescents and children insist on fasting during the holy month of Ramadan often for social and cultural belonging as well as religious sense of fulfillment. The various potential risks of fasting during Ramadan, including hyperglycemia, hypoglycemia, ketoacidosis, and dehydration. However, the risk of hypoglycemia during the daytime is by far the most disliked complications as its treatment entails the intake of carbohydrate with resulting premature breaking of the fast, which induces a sense of guilt and failure by the faithful patients. There are limited data on the patterns of diabetes management specifically about children and adolescents during fasting in Ramadan.

AIM OF THE WORK

• The purpose of this study was to ascertain the knowledge, attitude, and practices to the management of diabetes during Ramadan fasting among physicians who look after children and adolescents living with diabetes in Arab Society for Paediatric Endocrinology and Diabetes (ASPED) countries.

SUBJECTS AND METHODS

- **Study design:** An electronic survey was distributed to a large pool of practicing physicians associated with the ASPED countries (no = 464). A web-based commercial software (Survey Monkey, Palo Alto, CA, USA) was used.
- The questionnaire covered several aspects of management of Ramadan fasting in young patients with diabetes. They all received an initial invitation e-mail that explained the rationale and what was required from the respondents, followed by 4 reminder e-mails over a 12-week period including unique e-mail-specific electronic links to the questionnaire.
- All subjects provided an explicit informed consent electronically to voluntary participate before they could proceed to the survey questions.
- The survey was provided in English and French.
- **The survey questionnaire:** The survey included 19 questions which were validated by 4 senior paediatric and adult endocrinologists. The first question requested the approval of the targeted physicians to participate in the survey and the following two questions were aimed to define the professional profiles of the respondents and their country of practice.
- The remaining 16 questions constituted "practice on diabetes management during Ramadan fasting questionnaire. The questions covered the physicians practices including their usual advice to patients on whether to fast or not, medications and dietary adjustments during Ramadan, and when fasting should be terminated.
- The final two questions were about views and experience of insulin pump therapy during fasting.



Figure[1]: Age to start trying fasting in Ramadan (years)

RESULTS

- A total of 166 respondents confirmed eligibility, willingness to participate in the study and were eligible for inclusion in the study.
- The largest numbers of respondents came from Saudi Arabia (31), followed by United Arab Emirates (22), Egypt (19), Iraq (18), Algeria (17), Kuwait (11), Oman (11), Sudan (7), Palestine (6), and Tunisia (5). Smaller numbers (1-4) came from other countries in the region as Morocco, Libya, Bahrain, Lebanon, Qatar, and Jordan.
- Of the 166 eligible responders, 142 (85.5%) were pediatricians, and the remaining 24 (14.5%) were adult physicians; all but 10 were specialists or consultants.
- Most respondents (79.6%) would allow their patients to fast, if they asked for it and 75.2% of them favored structured educational sessions 2-4 weeks before Ramadan, but 23.5% would do it earlier up to 2-3 months.
- 35%, 38%, and 24% of respondents allow their patients to fast by the age of 14 and 12 and ten years respectively; while 3% allow fasting as young as eight years [Figure 1].
- 31.0% and 39.3% of the participants stated thought their patients can complete 50% and 80% of the fasting days.
- 45% stated that hypoglycemia unawareness was the most serious complication for a patient to be at "very high-risk" from fasting [Figure 2]. 62% of the respondents reported that fasting has to be broken if symptomatic hypoglycemia occurred regardless of the BG level fast and 48.2% of them thought fasting should be discontinued if BG exceeded 300 mg/dl. 63.4% of respondents decreased the dose of basal insulin by 25% from original dose, but 23.2% would reduce it by 10% only [Figure 3].
- 56.4% used rapid-acting analog with meals according to carbohydrate counting. 81.1% recommend a specific dietary regimen for their patients. 52.8% thought that use of insulin pumps decreases the frequency hypoglycemia during fasting compared to multiple daily injections; however, 39.6% were not pump users.

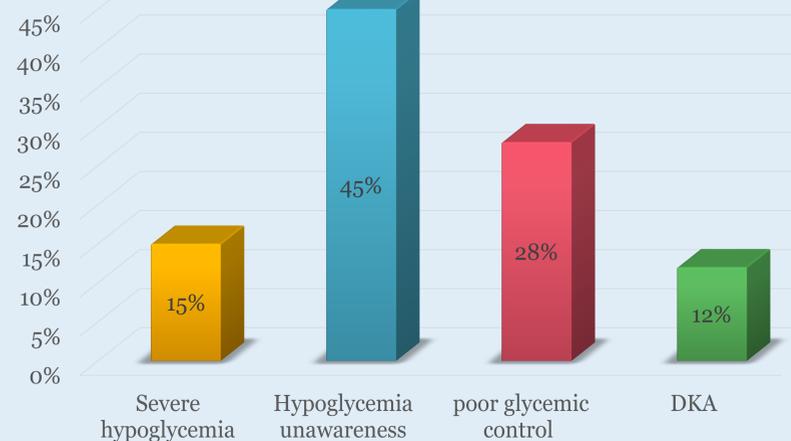


Figure [2]: Risk stratification of the high-risk group to fast in Ramadan

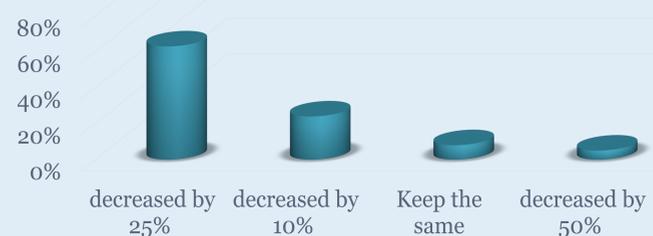


Figure [3]: Changes in therapeutic regimens in basal insulin during fasting

CONCLUSION

- The present survey documented for the first time the patterns of clinical management of fasting in Ramadan in adolescents by relevant specialties from the ASPED region.
- There is a wide variation in the pre – Ramadan medical assessment modalities, therapeutic approaches in the medications' total dose, meal planning, BG monitoring frequency, risk factor groups and levels to break the fast.
- This observation calls for targeted educational efforts in the region, highlights the need for ASPED- sponsored guidelines to help clinicians meet the challenges in this area of diabetes care.