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**CASE STUDY 2: CHILDREN/ADOLESCENTS**


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**NARRATIVE:**


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Kirsten is a 2-year-old with type 1 diabetes. She was diagnosed at age 18 months. Her mother calls worried about low BG levels and decreased appetite. When asked when the hypoglycemia was happening, the mother reported hypoglycemia almost every morning around 1000 hours. Kirsten has insulin and then breakfast at 0800 hours. Lately, however, her mother has had difficulty getting Kirsten to eat all of her breakfast.

**PHYSICAL AND LABORATORY FINDINGS:**


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- Present weight is 12 kg

**CURRENT DIABETES MEDICATION:**


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- Intermediate-acting (basal) insulin 1 unit ac breakfast
- Rapid-acting (bolus) insulin 0.5 units ac breakfast
- Rapid-acting (bolus) insulin 0.5 units ac supper

**RECENT SMBG RESULTS:**


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DATE	BLOOD GLUCOSE						INSULIN				COMMENTS
	ac bkfst	ac lunch	ac supper	hs bed	2300	0300	B	L	S	hs bed	
Nov 5	8.4	15.8	10.9	9.8	13.6		IA 1.0 units RA 0.5 units		RA 0.5 units		Low between bkfst and lunch.
Nov 6	8.7	13.6	9.2	8.8	14.2						Low between bkfst and lunch.
Nov 7	12.6	9.2	8.4	8.9	17.6						
Nov 8	7.6	8.7	8.9	9.2	15.6						Low between bkfst and lunch.

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**CASE STUDY 2 CHILDREN/ADOLESCENTS QUESTIONS:**

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1. What are the BG goals for this age group?
2. What can the mother do to decrease the chance of hypoglycemia mid-morning?
3. What changes would you make in the insulin/meal plan?
4. What if no rapid-acting insulin is given with 0700 am breakfast, she eats the morning snack at 1000, and is 20.0 mmol/L before lunch at 1200 noon?

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**CASE STUDY 2 ANSWER SHEET:**

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- 1. BG goals are more relaxed for toddlers (6.0 to 10.0 mmol/L at a meal; and individualized at bedtime). It is very important to prevent recurrent, severe hypoglycemia in young children.**
- 2. Suggest the following:**
  - Give insulin after breakfast.
  - If BG is < 10 mmol/L, she may not need any rapid-acting insulin. This should decrease the chance of a mid-morning low.
  - If BG is > 10 mmol/L, she probably needs 0.5 units rapid-acting insulin and could give it before or after the meal.
- 3. Suggest the following changes:**
  - Give insulin after breakfast. If the BG is > 10 mmol/L and she eats at least half her breakfast, give the usual amount of rapid-acting insulin (0.5 units). If the BG is < 10 mmol/L and she eats only half or less of her breakfast, then try without rapid-acting insulin.
  - May need to use an insulin-to-CHO ratio. Or may need to review the CHO amount at breakfast and reduce if appropriate.
  - Look at the readings. Although only a few, the BG readings appear to increase at lunch.
  - The high ac lunch may be related to treating the mid-morning low. Once the mid-morning lows are corrected, the ac lunch readings may improve and not require further insulin adjustment.
  - As the hs BG readings are in range, it is probably necessary, for the time being (in this age group), to ignore the relatively high 2300 hours BG readings.
  - Consider discussion of insulin pump therapy (CSII) to allow delivery of smaller doses of insulin.
- 4. Suggest the following:**
  - Consider adding some rapid-acting insulin at lunch to correct high BG if necessary.
  - If giving rapid-acting insulin ac lunch, the BG should be 20 mmol/L and no extra activity should be planned. Suggest rapid-acting insulin 0.5 units and retest in two hours.