

Letters to the Editor

Insulin drip can be dangerous.

Sir,

Diabetic ketoacidosis (DKA) is one of the acute life threatening complications of diabetes mellitus (DM) particularly that of type I. Careful and scientific approach is needed in the management of this complication in order to have the best outcome. Given the health care infrastructure and facilities available in this country, a patient with a pure DKA should not die unless complicated or precipitated by some other illness. While working in a major hospital in Mecca during Haj (annual Muslim congregation of pilgrims) I came across two patients who died due to DKA. Both of these patients had type I disease and presented to the hospital in acute stage. They were properly diagnosed and admitted to male medical ward. It is to mention here that most of the intensive care units are full during this period. The physician in charge had prescribed insulin (regular) 100 units in 500 ml of normal saline to be given over a period of 10 hours. In addition patients had received an initial bolus dose of regular insulin intravenous (I.V.). But infusion pumps were not available; patients were directly connected to insulin drip using plain dripsets. Unfortunately, the entire 100 units had gone in 1-2 hours. There could be many reasons for this fatal mistake. 1. It is difficult to regulate the infusion using the plain dripset; 2. The workload during Haj is tremendous and it may be hours before doctor returns back to the patient; 3. Laboratory and nursing staff are similarly over loaded during Haj. 4. Many times nurses posted in medical wards during Haj have never worked in medical department before and so are unaware of what is happening to the patient. In both these two cases I was called to attend the patients. One was already dead when I saw him and the other was profusely sweating in addition to having a deep acidotic breathing with an acetone smell. Blood glucose level was very low. However inspite of all our efforts we failed to rescue him. I studied the files retrospectively. DKA patients have fundamentally an insulin deficiency. Blood glucose unable to enter the cells goes on rising and causes severe hyperglycemia and resultant osmotic effect and dehydration. Free fatty acids are mobilized and ketogenic machinery is put on which leads to ketosis, ketonuria and acidosis. Subsequent symptoms complicate the acid base, electrolyte and volume status of the patient further.¹ Patient needs I.V. fluids and regular insulin I.V., besides the other necessary supportive measures. One of the most important and crucial point is that besides fluids patient need a continuous but low dose of insulin not only for lowering the blood sugar but to also shut down the ketogenic machinery which invariably takes 24-48 hours. Time is also needed to allow the body

homeostatic systems maintain an osmotic balance across the membrane in different tissue compartments and to correct the electrolyte imbalance. Bringing the blood glucose to normal levels very fast does not serve any purpose but is rather disastrous as seen in above described patients. Rapid lowering of glucose levels leads to severe dysequilibrium, and cerebral edema, which can cause death as, happened in our patients. The message is clear. If it is not possible to monitor the blood glucose continuously as is done in some centers,² blood sugar should be monitored frequently. If infusion pumps are not available, it is better to give insulin I.V. in pulses rather than as drip, especially if physician cannot monitor the patient personally and frequently. Besides the classical treatment protocols mentioned in the textbooks, other variables like understanding of pathophysiology of the process, laboratory backup available, quality of nursing care, individual response to the treatment, availability of expert opinions should all be considered while taking any therapeutic decision. I hope that we will not lose any more patients of DKA in future due to such fatal miscalculations.

References

1. Foster DW. Diabetes Mellitus in Harrison principles of internal medicine 14th edition. McGraw-Hill companies, Inc, 1998; 2: 2060-2081.
2. Wangnoo SK, Zarger AH, Mattoo V, Reshi AR, Dar FA. Continuous glucose monitoring in diabetic ketoacidosis using the monitor GM-1320. Diabetes Bulletin 1989; 9: 142-145.

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Hypothyroidism. The need for high degree of suspicion for early diagnosis.

Sir,

Apparently, at first sight there could hardly be a more simple disorder to diagnose and treat than hypothyroidism, but, in reality, this is not always true!¹ The clinical feature of hypothyroidism depends on duration and severity of the disease. If the complete or near-complete thyroid failure develops over several months or years, many of the classical features of hypothyroidism like cold intolerance or hoarseness of voice are likely to be present. But this

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is not the case in most of the patients where the clinical diagnosis is not obvious. In such cases if the diagnosis of hypothyroidism is not positively entertained in, for example, a middle-aged woman presented with weight gain, depression or easy tiredness, an opportunity for early diagnosis and treatment will be missed. Moreover, in the young adults, the early symptoms tend to be non-specific, whereas in the elderly the symptoms may erroneously attributed to other disorders like parkinsonism, endogenous depression or Alzheimer's disease. The aim of our work was to study the reasons of delay of diagnosis of hypothyroidism in a group of Sudanese patients.

The study involved all the patients with an established diagnosis of hypothyroidism (confirmed by laboratory tests) who attended a weekly endocrine clinic in Wad Medani, Sudan, in 8 months during 1999. The patients were requested to fill in questionnaires (with the help of a doctor) with emphasis on presence and duration of symptoms and signs of hypothyroidism, the patients' reactions to the symptoms and signs and their overall evaluation of their health.

We studied 40 patients, 32 (80%) were females. Their ages: 45 ± 15 years. Of these patients only 5 (12.5%) complained of the symptoms of hypothyroidism at their initial visit (before diagnosis), but when we specifically asked them about these symptoms the majority 30 (75%) admitted their presence. These symptoms included: cold intolerance 24 (60%), easy tiredness 20 (50%), slowness of movement 20 (50%), constipation 12 (30%), weight gain 12 (30%), change of voice 8 (20%), hearing defect 6 (15%) and forgetfulness and slow mentation 4 (10%). Eight patients (20%) of the patients considered themselves as perfectly well, and 22 (55%) felt that are reasonably healthy and were not much disturbed by the symptoms of hypothyroidism.

There is an obvious delay in the diagnosis of hypothyroidism in our parents. The diagnosis of hypothyroidism needs a high degree of suspicion and is not infrequently missed by doctors. Also some symptoms and signs of hypothyroidism are interrupted in our society in a somewhat different manner as compared to other societies. For example, slow mentation and laziness may be attributed to old age if patients complain to their relatives about them. Some symptoms like weight gain may be

perceptively conceived as a sign of good health or attractiveness in females or affluence in males. Symptoms of hypothyroidism bear much resemblance to these diseases like Alzheimer, Parkinsonism or even simple aging. Some features like voice changes or goiters are considered by patients as not or minimally disturbing. Another factor leading to diagnostic difficulty or delay is that the symptoms and signs of hypothyroidism are difficult to be detected by clinicians when they are in the mild degrees. The non-specific features of acute illness, or possible effects of the endemic diseases on the thyroid function, which may or may not correct themselves after recovery, should always be put in mind.²

The clinical and diagnostic difficulties facing clinicians in regard to cases of hypothyroidism in the Sudanese society have to be well appreciated, since this would lead to missing or delaying the diagnosis. Thus, these patients may spend much money and time in an effort to treat individual symptoms (missing the wood!). If left untreated many of these symptoms may present very late with grave complications like heart failure, hypothyroidism or psychosis. The best current recommendation is to maintain a low threshold for suspecting hypothyroidism especially in obscure presentations or for patients at risk like those had neck irradiation took amiodarone or lithium or did pituitary surgery.

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References

1. Weetman AP: Hypothyroidism: Screening and subclinical diseases. BMJ 1997; 314: 1175-1178.
2. Fahal AH. Thyroid function tests in mycetoma. East Afr Med J 1995; 72: 454-456.