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Letters: Original Observations

Climbers with diabetes do well on Mount Kilimanjaro

More than 30 000 climbers attempt to reach the summit of Mount Kilimanjaro every year; it is likely that a significant proportion have diabetes [1]. Summit success rates in climbers with diabetes appear to be similar to those without diabetes [2,3], with the exception of a study carried out on Mount Kilimanjaro in 2001, in which all 15 climbers with Type 1 diabetes failed to reach the summit [4]. One explanation suggested for this discrepancy is the short time of 5 days allowed for climbers to reach the summit of Kilimanjaro at 5895 m.

Whilst investigating altitude physiology and acute mountain sickness (AMS) on tourist trekkers attempting Kilimanjaro, we compared a group of 11 climbers with Type 1 diabetes [six males, five females, age 20 ± 7.6 years (mean ± SD), body mass index (BMI) 22.0 ± 2.3 kg/m^2] with 275 subjects without diabetes (180 males, 95 females, age 33 ± 12.1 years, BMI 23.0 ± 2.8 kg/m^2). All subjects gave written informed consent and ethical approval was obtained from the Tanzanian Commission for Science and Technology (COSTECH reference 2005-261-NA-2005-62). Eight of the eleven diabetic climbers (73%) took regular acetazolamide as AMS prophylaxis, compared with 66 (24%) of subjects without diabetes. The climbers with diabetes attempted the mountain over 7 days, with two acclimatization nights at 3700 m during ascent. Seven of the eleven climbers (64%) reached the summit, a success rate comparable with that of the rest of the hiking population (61%); three reached 5600 m, and one reached 4700 m. Reasons for turning back were AMS symptoms of dizziness, fatigue and nausea.

AMS scores (Lake Louise questionnaire) were not different between those with or without diabetes (median = 6, range 1–15 versus median = 6, range 1–21 respectively on the summit day, $P = 0.389$). The physiological response to high altitude in the diabetic group was not different to that in non-diabetic climbers (SaO_2, respiratory rate, heart rate and lung function). Although we did not have access to capillary blood glucose measurements, members of the group monitored their own measurements regularly whilst on the mountain.

Mount Kilimanjaro is an extremely popular tourist mountain, and the risk of AMS is high for everyone. Climbers with Type 1 diabetes should not have a higher rate of AMS and should not have a reduced chance of success if they are well prepared and acclimatize, and we suggest the two extra acclimatization nights and the high rate of acetazolamide use were critical factors in this group's success.

Competing interests

None to declare.

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Efficacy of continuous subcutaneous insulin infusion (CSII) in patients with classical contraindications to its use

There is ongoing debate about optimal patient selection criteria for continuous subcutaneous insulin infusion (CSII). There is international consensus about many of the indications for pump therapy; an example includes recurrent hypoglycaemia despite optimization of diabetes care. There is, however, much more variation in the list of contraindications given by various authors. A recent paper in *Diabetic Medicine* suggested that CSII may provide greatest benefit, as assessed by a fall in glycated haemoglobin (HbA_{1c}), to a subgroup of patients with classic contraindications to its use [1]. This publication prompted us to undertake a retrospective audit of local patients on CSII attending the Christchurch Diabetes Clinic, New Zealand.

Baseline and follow-up data were obtained before CSII, 3 to 6 months post-commencement on CSII, and also from the last clinic visit. Items audited included HbA_{1c}, presence of predefined contraindications to CSII use, body mass index (BMI), age, duration on CSII, diabetes duration, hypoglycaemia requiring external assistance, diabetic ketoacidosis (DKA), and complications of pump use. The New Zealand health system is predominantly publicly funded, i.e. similar to the UK National Health Service, with limited access to publicly funded CSII. At the time of the audit, long-acting insulin analogues were not readily available as an alternative treatment modality. Prior to the audit, approval was gained from the Upper South A, New Zealand Health and Disability Ethics Committee.

