Tramadol-induced hypoglycemia: An unusual adverse effect

Sir,

We read the article by Mahmood et al. [1] with great interest, and would like to share our observations of hypoglycemia the following tramadol in our cases of head injury and highlight the probable mechanisms for hypoglycemia induced by tramadol.

We have noticed rapid fall in blood sugar (as low as 50 mg/dl) within 60-90 min after intravenous administration of tramadol in some cases of head injury, who developed features of restlessness and agitation. Similar clinical and biochemical manifestations reappeared when tramadol was administered. Our cases did not suffer from hypoxemia, hypotension, arrhythmias, or any other demonstrable causes to account for restlessness and agitation, and were not on any antidiabetic agents. In our series, hypoglycemia was observed within the first 3-6 days of tramadol treatment in certain group of patients, particularly in elderly and predisposed. Tramadol induces hypoglycemia in some susceptible individuals due to a reduction in hepatic gluconeogenesis [2] and increased insulin concentration. [3] Apart from that, it enhances insulin signaling which increases hepatic sensitivity to insulin and stimulates glucose utilization by muscles. [4] Even the recent publications [5,6] to have described hypoglycemia following tramadol administration. The probable reasons for variations are related to the expression of CYP2D6, and the amount of M1 synthesized for a given dose of tramadol.

Approximately, 10% of Italians, Portuguese, and Greeks, and roughly one-third of people from the Arabian peninsula and Eastern Africa are “ultrarapid metabolizers” and susceptible for adverse effects of tramadol when compared to their counterparts. [7]

Tramadol is one of the widely prescribed analgesics by practitioners, as they believe that it is safe. Hence, we have to motivate the practitioners to consider hypoglycemia, whenever their patients on tramadol develop features of restlessness or agitation. Let us teach and train our health science students, and healthcare providers to recognize tramadol-induced hypoglycemia from the point of patient safety.

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There are no conflicts of interest.

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