

Poor awareness of the proper injection techniques adversely affects glucose control

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Diabetic patients who don't know proper injection techniques may administer insulin incorrectly, leading to poor glycemic control and adverse outcomes, a new study from Iraq finds. The results were presented in a poster Monday, June 23 at ICE/ENDO 2014, the joint meeting of the International Society of Endocrinology and the Endocrine Society in Chicago.

"Lack of simple education about proper injection techniques could be blamed for many complications and [adverse outcomes](#). I thought about conducting this study after managing two teenage [patients](#) who suffered [diabetic ketoacidosis](#), a life-threatening acute emergency. The condition occurred due to the lump formed because they were unaware of the proper injection techniques," said study author Hassan A-R Ibrahim, MBChB, MSc, diabetes specialist at the Layla Qasim Diabetes Center in Erbil, Kurdistan, Iraq.

Insulin therapy injection technique among insulin-treated [diabetic patients](#) has been poorly studied, Dr. Ibrahim said. So, to investigate the impact of injection technique on [diabetes control](#), he administered a 12-item, oral structured Injection Technique Knowledge (ITK) Questionnaire to 216 clinic patients that assessed their understanding of injection techniques and ability to administer their injections successfully.

Overall, the mean score was 47.5%, and only 31% of the patients answered more than half the questions correctly. Half the patients with

poor test scores had [poor glycemic control](#) compared with 28% of the participants with acceptable scores.

"I was surprised by the results of the study and at the same time disappointed. I did not expect that such a great number of patients would not be aware of the proper use of insulin. This was mainly due to inadequate education and resources for the patients using insulin," Dr. Ibrahim said.

Dr. Ibrahim found no significant association between the test score and the patients' residency, gender, age or duration of diabetes, although more highly educated patients, including patients who had received previous education on injection technique, had higher scores. He did find associations between the test score and the type of diabetes, insulin regimen, insulin devices, glycemic control, prior training on the correct injection technique and previous lump formation at the site of injection.

Dr. Ibrahim advises that educating patients is crucial. He recommends that an educator should be available in the clinic to teach all new patients having their first injection the correct techniques and that no patient should be sent home unless the doctors are sure that they have the knowledge they need. Patients need to learn the correct insulin dosing for vials and syringes, knowledge about the preferred sites of injection, how to prevent the formation of lumps at the injection sites, and the negative consequences on blood sugar control.

"We have an educator but she cannot cope with the large number of the patients visiting the center. Some patients are not given enough time to learn. Therefore, more educators should be allocated and annual reassessment is recommended," he advised.

Provided by The Endocrine Society

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