

STUDY OF INSULIN INJECTION TECHNIQUE AMONGST THE NURSING STAFF

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ABSTRACT

Objective: To assess the knowledge and technique of insulin injection amongst the nursing staff.

Methods: A total of 272 nurses working in three different hospitals (one private and two public) of Lahore, Pakistan were assessed regarding timing with meals, knowledge of site of insulin injection, tissue of injection, and technique of injection. Observations were recorded in Proforma and results were analyzed.

Results: Out of these 272 nurses only 40 knew all the steps regarding the insulin injection technique. The fact that insulin should be injected 30 minutes before meal was known to 57.4% and 66.2% had the idea of injecting insulin in subcutaneous tissue. Sixty-four percent knew about injecting insulin in upper arm, 75% knew about upper thigh as site of injection and 89.7% of the nurses knew that this has to be given in the abdomen. Technique of pinching skin was right in 64% nurses, 56.6% knew that cleaning the skin with spirit is not required. While assessing the technique of injection 72.8% of the nurses gave it correctly at an angle of 90°.

Conclusion: Nurses an integral part of health care providing team are not themselves properly trained to administer insulin injection in a developing country like Pakistan. Therefore for better health care provision their training has to be improved generally in all the fields and especially in the field of diabetes mellitus. The authorities responsible for their training should realize these facts and take effective measures.

KEY WORDS: Injection technique, Subcutaneous Insulin, Diabetes nursing, Diabetic education, Diabetes care.

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INTRODUCTION

Diabetes mellitus is a major health problem faced by the world and this burden is going to increase further in next quarter of century. According to WHO, Pakistan is estimated to be having 4th largest diabetic population by the year 2025. Good management of DM is a challenging job and it mainly revolves around the diabetic person himself. Diabetic Self Management Education (DSME) is the cornerstone for

all the diabetics eyeing on successful health related outcome.¹ In DSME there must be involvement of instructional team, which must consist of at least a registered dietician and a registered nurse.² This team should also include behaviorist, exercise physiotherapist, ophthalmologist, optometrist, and pharmacist. Nurses are the most utilized instructors in delivery of formal DSME.³⁻⁵ Different highly motivated organizations are working worldwide providing high quality diabetic care including self-care education programs. Such organizations like ADA, AADE, are lacking in Pakistan, though Diabetic Association of Pakistan Karachi and Lahore organize some education programs from time to time.

Furthermore ethnic background, formal education level, reading ability and barriers to participation in education are important demographic variables to be considered to maximize the effectiveness of self-management

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education.⁶ As an integral part of health care team trained nurses become more important. Keeping in view our social setup, level of education among our population and scarcity of organizations warping for better health care, role of nurses in provision of healthcare services becomes even more significant since they spend most of the time with admitted patients and are main source of information for the patients and their relatives regarding care of patient. Data is lacking regarding the assessment of quality of services provided by the health care workers in Pakistan.

METHODOLOGY

A Proforma was made following recommendations of American Diabetic Association, recommendations of Royal College of Nursing and a search on Internet, for proper technique of injecting insulin. After having verbal consent for participation in the study, nurses working in three different hospitals of Lahore were asked following questions: Status of their training, timing of insulin with meal, tissue to be injected and areas where insulin can be injected. Then they all were requested to mimic the technique of injecting insulin to a volunteer using uncovered insulin syringe and following points were noted: proper pinching of skin fold, cleaning area and angle of needle to injection site. All the observations were recorded in Proforma and results analyzed using SPSS version 10.

RESULTS

A total of 272 nurses participated in the study. Out of these 170 (62.5%) were registered nurses, 10.3% were 4th year students, 11% 3rd year and 16.2% were 2nd year students. All the eight steps included in the study were followed by only 40 nurses and out of these 28 were registered nurses. Four out of 40 nurses, who knew the proper technique, were from 4th, 3rd and 2nd year.

Analysis of the results in detail revealed interesting facts. Fact that insulin should be injected ½ hour before meal was known to only 57.4% of the nurses, 42.5% knew that it can be

given just before meal and two of them told that it can be given even up to two hour after meal and that specific timing with meal for injection of insulin is not required. A total of 180 (66.2%) nurses knew that insulin has to be given in subcutaneous area while 90 told that insulin is given intramuscularly and two of them had no idea in which tissue insulin can be given. When asked about site of injecting insulin, 174 (64%) knew about injecting in upper arm, 204 (75%) knew about upper thigh and 244 (89.7%) knew about injecting insulin in the abdomen. While observing the technique of injection 174 (64%) nurses pinched the skin properly, 154 (56.6%) did not clean the area with spirit and 198 (72.8%) injected the insulin at right angle to the skin.

DISCUSSION

Insulin therapy started during the 1920s⁷ and since then there is gradual improvement in quality and production techniques. Partanen and Rissanen have proposed that the way the injection is administered is equally important to good glycemic control as type and dose of insulin.⁸ Blood glucose control fluctuates with the technique used for insulin injection. Optimal insulin regimens for better blood sugar control has been targeted in large scale studies but little attention has been given how to inject insulin properly for better blood sugar control and avoidance of complications. Nurses play a crucial role as instructor in insulin administration.⁷

Internet search,⁹ recommendation of American Diabetics Association¹⁰ and recommendation of Royal College of Nurses,⁷ following is the recommended way of injecting insulin subcutaneously. Insulin has to be given in subcutaneous tissues of abdomen, upper back of arm and in the subcutaneous tissue of buttocks and thighs. It should be given by pinching skin fold between two fingers, at an angle of 90° half an hour before meal. When this recommended technique was compared in our study very disappointing results were obtained.

In the study only 40 nurses out of 272 (14.7%) knew the exact technique following all the steps found in the recommendations. Partanen and Rissanen observed⁷ injection techniques of patients. In their study 15% of the patients did not pinch up the skin while in our study 36% of the nurses did not pinch up the skin. Half of the patients injected at the angle of 90° while 72.8% of the nurses did so in the current study. In yet another study¹¹ 70% of the patients used proper pinch up technique to inject insulin and in our study 64% of the nurses pinched up skin properly.

As discussed above in developed countries where well advanced health care services are provided, assessment of the patients regarding how to inject insulin was not 100% perfect. Same assessment among nursing staff in our setup showed very disappointing results. Percentage of knowing proper technique of injecting insulin in our nurses is less than the patients from developed countries. Nurses are primarily responsible for teaching different self care techniques to the patients. It is obvious that technique of self injecting insulin amongst our patients will be even worse than expected. Hence it is essential to improve the quality of health care being provided in our country.

CONCLUSION

In developing countries like Pakistan the quality of healthcare is not satisfactory and for better care of patients, nurses have to be properly trained. Specialized nursing institution should be established to provide specialized training to nurses including diabetics nursing and hence improve quality of healthcare being provided.

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