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POST-GRADUATE DIPLOMA IN DIABETES MANAGEMENT AND EDUCATION

DME 7102 Diabetes Self-Management Education in Psychosocial Context

Mini Video Assignment: Self-management of Insulin

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Video assignment on insulin injection guide

The video is about of a male patient, aged 45 year-old with Type 2 Diabetes Mellitus prescribed with basal insulin injection, received of an education on insulin injection techniques. The video had illustrated and reflected distinctly of present context of practice in diabetes clinic on individualize care. Overall, the insightful conversation and the main character played by the diabetes educator (DE) demonstrated the importance of DE's role in establish relationship with patient in order to engage effective teaching session. This included effective communications skills such as giving clear simple instructions, used easy and understand language, as well as positive body gestures that encouraged along the education session. Generally the steps of injection techniques using pen devises given by the DE was in sequence, brief and short that make possible for patient able to perform a returned demonstration.

However, to improve the education session there are few learning gap of interventions are needed to ensure self-manage care of patient more precise, focus and beneficial.

1. Assessment

A complete assessment is crucial to initiate a successful therapeutic education in insulin therapy. Ability of individual DE to identify the barriers, psycho-social and physical needs are important in diabetes self-management education.

Referred to the video clip, DE gained an understanding of patient's barrier which is fear of needle related to pain. Besides acknowledge barrier of patient, as a DE one should be able to suggest solution according to patient needs. Problem solving intervention such as provide reassurance of showing the needle size is small; 31G with 4mm – 6mm, coated secured with silicon, almost painless compare with finger prick needle [3] are necessary. Other than that, DE can use trial injection method to help to overcome the fear of needle pain by demonstrate it on abdomen rather than on the model of injection. This include assessing patient's readiness of acceptance and

asking for permission to perform. The feeling of fear eventually will diminish once trial injection attempted with support and positive guidance along the teaching at very initiate stage. Practice of injection with more focus or specific skill will eliminate fear and unhelpful thoughts [9].

DE should give time to explore more [9] of patient's perception, beliefs and distress about insulin injection. DE in video clip had demonstrated an ideal response of communication with patient by provide time for inquiries to answered. However, in effective assessment, DE failed to explore more of patient pshycho-social needs like patient lifestyle, routine, spouse or family support, financial needs and other special needs. According to Mirahmadizadeh et al [7] initial ability to identify psycho-social needs included misconception, insurance coverage or cost, regime insulin and other irrational fear of injection insulin will help to improve drug adherence.

Care of self-administration injection in chronic disease like insulin therapy should be cautioned. Ability to identify sensory and cognitive deficit of individual is compulsory [9]. DE need to assess and ensure patient do not develop any diabetes complications such as retinopathy and neuropathy that involve impaired vision and sensation. The reason is to avoid unsuccessful self-injection, wrong dose calibration that lead to complication hypoglycaemia and needle prick injury. Schiff [8] concluded that negative self-injection experience may reduce patient's adherence to treatment.

2. Basal Insulin Therapy

DE is accountable to educate how insulin prescribed works on body. Although DE achieve the goal in educating insulin injection technique, in the video clip the DE failed to explain the function of basal insulin to patient. It is necessary for DE to give reassurance of basal insulin is an indicator of disease progression and oral glycaemic agent may not be adequate to achieve good glycaemic control. This intermediate insulin regime is to be administer once a day, pre-bed (9.00pm to 11.00pm) at the same time to cover overnight glucose excursion [6]. Besides, educate insulin Insulatard

onset of action (1-2 hours), peak (4-8 hours) and duration (8-12 hours) to be administered same time each day is essential [6]. Knowing the onset of action, the peak action and duration of action of the insulin Insulatard will help patient to know when and how to use insulin to optimize blood glucose control for future.

3. Technique of insulin injection

The video teaching session DE had successfully demonstrated injection technique using pen devices. The steps were simple and easy, however there are several important interventions are necessary had not been taught or less emphasised. To achieve the goal of self-manage care in insulin therapy, steps require to be highlighted are as below;

3.1 Hand washing.

- Inform patient before and after procedure hand wash is essential to avoid contamination of injection procedure including site of injection.

3.2 Check right drug, dose, frequency and time of administration.

- Patient has to be aware always to ensure all is correct before administer the drug.
- Teach patient to recognize right type of insulin used. Code colour of Insulatard is light green at packaging.

3.3 Check insulin.

- Teach patient to check for discolouration and formation of clumps. Inform patient insulin Insulatard slight cloudy is normal.
- Inform patient once the cartridge opened, lifespan of Insulatard is 42 days [5].

3.4 Resuspension of cloudy insulin.

- Technique to ensure the cloudy insulin mixed well is gently roll 10 times (for cold insulin), tip up and down 10 cycles, and visually check for milky white appearance [3].

3.5 Dial the correct dose

- If have difficulty to view figure from dose window, dial accurate dose through hearing the 'click' sound. 1 click sound is 1 unit.

3.6 Site and rotation

- Assess and ensure site of injection is clean, dry, soft and free from scratches or redness.
- Explain to patient abdomen is preferable site as it easily to reach, and the absorption rate of insulin is more consistent.
- Educate patient the importance of injection site rotation is to prevent lipohypertrophy. Lipohypertrophy will obstruct insulin rate of absorption. Systematically done rotation site by spacing 1 finger / 1cm away from each injection site will prevent tissue damage and will prevent lipohypertrophy [3].

3.7 Injecting of pen needle

- Hold insulin pen with palm firmly, thumb on top the injection button.
- Sit upright position. The injection technique must do in on abdomen site with dummy set on top abdomen.
- With another hand secure the site of injection. Do not fold skin.
- Insert pen needle into the skin at 90º firmly and gently.
- Push dose button down with thumb completely and start to count 10 slowly before withdrawing. Rationalize to patient by counting 10 will ensure full dose delivery and to prevent insulin leakage.
- Gently withdraw the pen needle away from abdomen, observe for leakage [3].

3.8 Remove used pen needle

- Advice patient do not leave used pen needle attached to the pen as this will allow entry of air due to pressure higher from environment. This will lead to leakage and contamination of solution in cartridge.
- Pen needle should only be used once (single use). Reused needle will cause lipohypertrophy, pain, bleeding or bruising at site of injection [3].

4. Special Consideration While Receiving Insulin Therapy

In the video clip demonstration, nevertheless DE was successfully taught the skill of insulin injection technique, as DE she neglected to educate common side effect and some important issue that may arise while patient receiving insulin. Below are the several aspects of self-manage education need to be improved.

4.1 Hypoglycaemia

The patient need to be educated as soon as possible about early recognition and management of hypoglycaemia. Patient need to be informed what are the autonomic and neuroglycopenic signs and symptoms of hypoglycaemia, range of blood glucose for mild, moderate and severe hypoglycaemia, types of hypoglycaemia, as well as the management of hypoglycaemia according to the level of severity [3] [6]. Pay attention to the early warning signs of hypoglycemia, and treat low blood sugar promptly is the ultimate goal.

Besides, patient must educate the cause of hypoglycaemia in regards related and non-related to insulin therapy to reduce the risk of hypoglycaemia. Common causes of diabetic hypoglycemia include:

- Taking too much insulin or diabetes medication
- Not eating enough
- Postponing or skipping a meal or snack
- Increasing intensity or duration of exercise or physical activity without monitoring

- Drinking alcohol

Other preventive measures of hypoglycaemia is self-monitoring blood glucose (SMBG). As patient is receiving basal insulin Insulatard 10 unit pre-bed, advice patient to perform SMBG at pre-breakfast and at each time with sign and symptom of hypoglycaemia. Advice patient on careful monitoring is the only way to make sure that blood glucose level remains within target range.

4.2 Painful injection

In the beginning of conversation, patient addressed his concern fear of injection related to pain. DE in the video clip not only did not listen actively of patient's problem, she failed to deliver effective diabetes self-manage education and support (DSME/S). Problem-solving skills of DE for this patient is to provide tips for making injection less painful;

- Keep insulin pen at room temperature
- Use needle smaller diameter (31G) and shorter length (4mm)
- Single use needle at all time
- Choose new injection site each time, avoid site with bruising and swelling.
- Inject solution slowly
- Keep hand steady while injecting pen needle

4.4 Lipohypertrophy

Since lipohypertrophy is common for patient who receiving insulin therapy, DE is responsible to educate patient to prevent it from happen. Teach patient the technique of detection lipohypertrophy by self-examination through visual and palpation, practice rotation injection site using zone system and 1 finger / 1cm away from each injection and never reuse needles are the key measures to prevent lipohypertrophy from happen [3]. Lipohypertrophy were found to be related with higher HbA1c, higher number of injection sites, and higher rate of needle reuse as well as failed to alternate the injection site [1].

4.3 Bleeding and bruising

DE should alert patient of occasionally bleeding and bruising may occur when poor injection technique. Therefore, it is necessary for DE to reassure patient the signs of bleeding and bruising that will not bring any adverse effect on absorption of insulin generally [3].

4.4 Hypersensitivity

Localize skin hypersensitivity and allergy to insulin is uncommon, however DE needed to inform patient that it may occur. Patient is to remind to report immediately when rash or itch or hypersensitivity reaction develop. Drug reaction form needed to be completed and probably be admitted for insulin desensitization [6].

5. Safety Issues

Refer to the video played, DE emphasised to patient the safety measure of disposal pen needle into the hard plastic container with lid. It is important as DE to educate patient with diabetes on insulin therapy in safe handling of sharp properly from the initiation of injection therapy. However to improve teaching, DE could reinforce and rationale the purpose of using big needle cap to recap. This is to minimise the risk of needle prick injury. A scooping technique of recap with outer needle cap also can be taught later when patient gets familiarize with the practice [3].

Again DE can reinforce to patient the sharp container should avoid to be reach-out by children. Besides, proper disposal of sharps by return it to hospital or clinic when next appointment should be encourage to avoid patient dispose with normal waste [6].

In conclusion, as a DE to provide good education of insulin injection techniques is not merely to have general knowledge and skill to teach like any other injection. But rather,

implement effective assessment by gain understanding of patient psychosocial needs in acceptance of the therapy, assess patient readiness of change, have intensive knowledge of the therapy, good understanding of insulin prescribed, familiarise of techniques to smoothen the teaching and knowing the needs of safety are the challenges that need to be addressed. Therefore, this lesson of video clip has given great insight and reflective practice to improve self in teaching self-manage care for diabetes patient in future teaching.

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