NURSING INTERVENTIONS TO PREVENT LIPODYSTROPHIES IN INSULIN-TREATED PATIENTS

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Lipodystrophies are changes in the subcutaneous tissue and can be classified as: Lipohypertrophy (LH) and Lipoatrophy (LA).

Their development is associated with errors in insulinteraphy management such as incorrect rotation of injection sites and reuse of needles. It is one of the most common complications associated with insulin therapy with consequences that affect metabolic control, leading to a higher risk of hypoglycemia, increased glycemic variability and elevation of the HbA1c value.

It is essential to implement nursing interventions, in order to prevent this complication, with focus on person and family/caregiver education, empowering them to a more efficient diabetes self-management.

**Aims**

- Identify the factors contributing to this complication and its consequences to the person with diabetes;
- To define nursing interventions towards primary and secondary prevention of this complication.

**Method**

**LITERATURE REVIEW**

Research using search engines: Pubmed and Science Direct, with the keywords: Lipodystrophy, Lipohypertrophy, Insulin and Adult.

Total: 441 articles

**Application of inclusion criteria:**

- Adults;
- Type 1 or 2 diabetes mellitus under insulin therapy;
- Articles published between 2009-2019 about prevention and detection of lipodystrophies.

Total of 16 articles selected
It is important that nursing interventions educate the person and family/caregiver on:

- Performing a correct injection technique
  - Reviewing injection technique;
  - Practicing towards a correct injection technique.

- Avoiding the reuse of needles
  - Changing the needle in every insulin injection;
  - Using the shortest needles possible to facilitate rotation of injection sites and minimizing possible intramuscular injection.

- Performing an adequate rotation of injection sites with the following principles:
  - One area shouldn’t be used continuously for more than 4 weeks;
  - Dividing the area into half or quadrants (for example: buttocks or thighs) can help to define a more efficient rotation plan;
  - Each quadrant can be used for one week and then rotating according to a logical sequence which can help to memorize.
  - Each injection site should have a distance of at least 1 cm (1 finger large approximately) from the previous one.

It is important to educate towards inspecting the injections sites before insulin injection;
SECONDARY PREVENTION

How to proceed to the inspection of the injection sites:
- A direct and tangential light should be applied against a dark background;
- LH can have different presentations when executing observation and/or palpation as the image below illustrates (Figure 1)

<table>
<thead>
<tr>
<th>Type</th>
<th>Definition</th>
<th>Visibility</th>
<th>Palpation</th>
<th>Texture</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Small nodule</td>
<td>easy / better under tangential light</td>
<td>easy</td>
<td>elastic</td>
</tr>
<tr>
<td>B</td>
<td>Big nodule</td>
<td>clear / better under tangential light</td>
<td>easy</td>
<td>harsh-elastic</td>
</tr>
<tr>
<td>C</td>
<td>Flat plate</td>
<td>hard</td>
<td>uneasy / better by pinching</td>
<td>usually elastic</td>
</tr>
<tr>
<td>D</td>
<td>Flat nodule</td>
<td>absent</td>
<td>difficult / better by deep palpation or pinching</td>
<td>usually elastic</td>
</tr>
</tbody>
</table>

To execute the palpation technique present in Figure 2, it is important to have a room with good lightening and comfortable temperature;

- The person should be in a supine position;
- Using lubricant gel may help to perform this technique.

Figure 1: Different Lipodystrophies presentations

Figure 2: Palpation Technique
• Is the most reliable method to identify this alterations giving information about the nature and severity of the LH comparing to the palpation method, therefore allowing a better classification of the LH (size, distribution and elasticity).

• The visualization of the images in the ultrasound encourages behavioral changes for the person with diabetes.

Conclusion

Knowing lipodystrophies are a common complication among insulin-treated people, it is important to invest in person and family/caregiver education towards prevention, as well as, in the training of healthcare professionals who follow diabetes patients. It was not found data regarding Portugal, thus it would be relevant the development of research studies regarding this matter.

References