37 år som diabetesläkare

ANDERS FRID, VE ENDOKRIN SUS Malmö, 22 MARS 2018
Keep alive request failed
BM-test 1-44, 1981
Auto-Syringe Model AS6C 1981
Dean Kamen 1951 -
Om du använder en spruta med kort kanül, ca 13 mm, ska du sticka in hela kanülens i 90° vinkel mot huden.
CT of thigh, normal-weight adult male
Where do lean diabetics inject their insulin? A study using computed tomography

The aim of injecting insulin is to deposit the hormone in subcutaneous fat. The lateral aspect of the thigh has been recommended as an appropriate site for insulin treatment. For many years, long needles were used, although many found the thigh an inconvenient site. More recently, shorter needles have been introduced. However, there are some concerns about this practice. Some patients report discomfort when inserting the needle, and some report injection site reactions. Another potential issue is that the injection site may not be easily accessible for patients who have limited mobility.

Patients, method, and results

We studied 34 patients, three of whom were women. We assumed that the fat layer was at least 0.5 cm in most women and therefore continued to test. Two percutaneous needle and one weekend attype 2 diabetes and the rest had type 1 diabetes. All patients were treated with insulin. Three of the patients had insulin pumps. All patients were aware of the importance of accurate insulin injection, and none had a history of insulin injection complications. Computed tomography was performed using a 64-slice scanner with a 128x128 matrix and a 512x512 pixels and a display field of view of 40 cm, making the pixel size 0.78 mm. Measurements were taken from the subcutaneous fat, which we define as fat. Computed tomography scans were obtained immediately before the injections and at 5, 10, and 20 minutes after the injection. The lateral and anterior areas were measured for each site, as well as the total area.

The table shows the results. The lower part of the thigh had less subcutaneous fat, as expected, and data for this site are not included. The mean difference in subcutaneous fat thickness was 4.5 cm (range 3.5-5.4 cm). Mean volume for 60 injections of the thigh were 2.5 cm³ (range 1.1-3.9 cm³), upper arm 0.6 cm³ (range 0.3-2.4 cm³).

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<th>No</th>
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<th>Weight (kg)</th>
<th>Height (cm)</th>
<th>Subcutaneous Fat (mm)</th>
<th>Anterior aspect (mm)</th>
<th>Thigh fat (mm)</th>
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Comment

The striking finding in most patients was the thickness of the subcutaneous fat layer. The lateral aspect of the thigh had more subcutaneous fat than the anterior aspect, and some sites were noted to have more subcutaneous fat than usual. The result was unexpected for many patients. Those patients experienced no pain and had a considerably easier injection experience. In patients with type 1 diabetes, another finding was the severe reduction in fat volume, 19 mm (range 15-23 mm) for the thigh, but only 5 mm (range 1-10 mm) in the anterior aspect. The thigh was considered comfortable and with the scan where the area was not supposed to be measured, one man (14) who had had diabetes for 30 years and was very thin, had 5 mm of subcutaneous fat in the anterior aspect, as the lateral aspect of the thigh, however, he had 19 mm of fat. The fat was not classified as normal around the thigh and could not have been the result of localized lipodystrophy. Three findings show that many diabetics of normal weight have very thin layers of subcutaneous fat in the lateral aspect of the thigh, and many available equate insulin inaccuracy at least when using the modern techniques—this is a potential risk for injections with a 1.2-13 mm needle.

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Fitter Attendees
(54 countries)
NB. Additional ones in ME, N Africa and Asia
New Insulin Delivery Recommendations

Anders H. Frid, MD; Gillian Kreugel, DSN; Giorgio Grassi, MD; Serge Halimi, MD; Debbie Hicks, DSN; Laurence J. Hirsch, MD; Mike J. Smith, DSN; Regine Wellhoener, MD; Bruce W. Bode, MD; Irl B. Hirsch, MD; Sanjay Kalra, MD; Linong Ji, MD; and Kenneth W. Strauss, MD

FITTER Recommendations adopted into Local Insulin Delivery Guidelines
(NB. All Europe and ME, much of Asia and northern S. America)
Nuevas recomendaciones en la técnica de aplicación de insulina

Anders H. Frid, MD; Gillian Kreugel, DSN; Giorgio Grassi, MD; Serge Halimi, MD; Debbie Hicks, DSN; Laurence J. Hirsch, MD; Mike J. Smith, DSN; Regine Wellhoener, MD; Bruce W. Bode, MD; Irl B. Hirsch, MD; Sanjay Kalra, MD; Linong Ji, MD; and Kenneth W. Strauss, MD
FDA News Release

FDA approves first automated insulin delivery device for type 1 diabetes

For Immediate Release

September 28, 2016

Release

Español (/NewsEvents/Newsroom/ComunicadosdePrensa/ucm523204.htm)

The U.S. Food and Drug Administration today approved Medtronic's MiniMed 670G hybrid closed looped system, the first FDA-approved device that is intended to automatically monitor glucose (sugar) and provide appropriate basal insulin doses in people 14 years of age and older with type 1 diabetes.
Evidensbaserad vägledning för bra behandling av diabetes typ 2

• Paradigmskifte 1: Förhindra att HbA1c stiger = glukosminne etableras.
• Paradigmskifte 2: Det finns glukossänkande behandling som minskar mortalitet vid etablerad kardiovaskulär sjukdom.
• Paradigmskifte 3: Förbättrad indelning av diabetes typ 2 ger bättre forskning och bättre möjligheter till individstyrda behandling.