

## A Cry of Pain for Painless Insulin Lipohypertrophy

**Sandro Gentile<sup>1\*</sup>, Giuseppina Guarino<sup>2</sup> and Felice Strollo<sup>3</sup>**

1. Campania University “Luigi Vanvitelli”, Naples, Italy
2. Nefrocenter Research & Nyx Start-Up Study Group Coordinator
3. Elle-Di and San Raffaele Research Institute, Rome, Italy

**Corresponding author:** Sandro Gentile, Campania University “Luigi Vanvitelli”, Naples, Italy,  
Email: s.gentile1949@gmail.com

**Received:** January 24, 2020 , **Accepted:** January 31, 2020, **Published:** February 21, 2020

**Keywords:** Insulin, Lipohypertrophy, Type 1 Diabetes Mellitus,

Way back on February 2, 2012, in NEJM issue 366: 9 a case of lipohypertrophy (LH) was published as a consequence of insulin injection in a person with T1DM (Type 1 Diabetes Mellitus) [1]. Whoever saw those pictures will never forget so huge disfiguring LHs. Still a question arises spontaneously: how was that even possible for those huge lesions to get as bulky as udders without who needed noticed by any physician visiting a chronically ill patient needing insulin prescriptions on a regular basis? Such consideration is in line with what observed in the scientific literature. In fact, despite more papers have been published on LHs since 2012, as large as a 2% to 77% difference in lesion prevalence has been reported!!! A recent Meta-Analysis points out that most of the 26 papers taken into account are of poor quality, based on extremely variable and often approximately described - if so ever - LH identification methods including patient self-assessment or self-administered questionnaires followed by direct observation by endocrinologists, dermatologists, radiologists and other ill-defined caregivers. Based on the above, the Authors of that meta-analysis suggest to perform skin ultrasound scans in all insulin-treated patients and even to get skin biopsies to rule out any underlying amyloidosis-related lesions [2]. How is it possible that skillful

experimenters publishing on international journals do not realize that (i) despite really sound methods being necessary for science, (ii) instrumental or invasive investigations are not compatible with big numbers and (iii) most patients would be totally free from LH when carefully educated to correct insulin injection techniques? Approximately half a billion people in the world have diabetes (DM) and all people with T1DM plus some 20-25% of those with T2DM use insulin, usually via injections, summing up to an estimated 150-200 million insulin users in the worlds [3,4]. Should it really be true that half insulin-treated people with DM have LH, some 75-100 million patients with DM (i) suffer from LH and (ii) might enjoy good glucose control conditions without being at high risk for hypoglycemia and facing any large glyceic oscillations when performing insulin injections correctly. All this would provide patients with a better quality of life and NHSs with lower health and social related costs. How can we clean up this mess? In our opinion we should wage war on LH by proceeding further than just choosing more and more technologically advanced insulin products and asking Schools of Medicine and Postgraduate Schools to spend more time on this topic. Scientific societies should also invest more energy and resources in the dissemination

of a new culture based on LH prevention among their delegates. Pharmaceutical companies should add precise, clear and impressive instructions to their packages on how to inject insulin correctly to prevent LH. Also physicians and nurses should set up their commitments in educational and clinical LH prevention and identification, and, finally, investigators should do better by keeping to more accurate diagnostic methods when publishing their results!

There is much work to do then.....still it's time for all of us to get it started.

### References

1. Landau S (2012) Insulin-induced Lipohypertrophy. *N Engl J Med* 366: 9

2. Deng N, Zhang X, Zhao F, Wang Y, He H (2017) Prevalence of lipohypertrophy in insulin-treated diabetes patients. A systematic review and meta-analysis. *J Diabetes Investig* 9: 536-543.
3. Centers for Disease Control and Prevention. Age-adjusted percentage of adults with diabetes using diabetes medications, by type of medications. United States, 1997-2011.
4. Garg SK, Rewers AH, Akturk HK (2018) Ever-increasing insulin-requiring patients globally. *Diabetes Technol Ther* 20: 21-24.

**Copyright:** ©2020 Sandro Gentile. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.