Estimated Economic Burden of Insulin Injection-related Lipohypertrophy in Chinese Patients with Diabetes

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Objectives

Lipohypertrophy (LH) is a relatively common complication of injecting insulin. It is reported to impair insulin absorption and may increase total daily dose (TDD) of insulin and associated costs. The economic burden of LH is unknown in China. This study aims to evaluate the effects of LH on TDD of insulin and explore potential health economic implications for China.

Methods

The following data were extracted from a literature review and the IMS Health Report (Diabetes China 2013):
• Insulin-injecting diabetes population in China1
• Prevalence of LH among insulin-injecting Chinese patients2
• TDD of insulin among patients with LH (estimated from a recent Spanish study3)
• Average unit cost of insulin in China1

Cost of excess insulin use was calculated per annum. All monetary values were converted to 2013 RMB, with a RMB-USD exchange rate of 6.14:1.

Results

• There are approximately 8.4 million insulin injectors in China, mostly with type 2 diabetes (T2D)1. The prevalence of LH in China was previously reported to be 31%2. In the Spanish study, patients with T2D and LH used 21 IU/day more insulin3;
• We estimated 15 IU/day excess usage vs non-LH injectors in China. The average insulin price in China is ¥0.215 per IU1. The estimated cost of excess insulin use due to LH is approximately ¥3,065,233,500 (S498,991,500 USD) per year.

Conclusion

• LH may represent a significant, addressable, economic burden in China due to excess insulin consumption. Taking steps to reduce LH may reduce healthcare costs in China.
• Additional studies should be conducted on LH prevalence, glycemic control (HbA1c, hyper- and hypoglycemia) and health resource utilization patterns specifically among the Chinese insulin-injecting population to validate and extend these findings.

Reference