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# 格列美脲联合艾塞那肽治疗肥胖 2 型糖尿病的疗效观察 *

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**摘要 目的:**探讨格列美脲联合艾塞那肽治疗肥胖 2 型糖尿病患者的临床效果。**方法:**选择 2016 年 1 月到 2019 年 1 月我院收治的 82 例肥胖 2 型糖尿病患者作为本次研究的对象,并将其随机的分为研究组和对照组,每组 41 例。研究组患者给予格列美脲联合艾塞那肽进行治疗,对照组患者给予格列美脲治疗,观察和比较两组患者治疗前后空腹血糖、餐后 2 h 血糖、空腹和餐后 2 h 血清 C 肽、身体质量指数(body mass index, BMI)、总胆固醇(total cholesterol, TC)、甘油三酯(triglyceride, TG)、低密度脂蛋白胆固醇(low density lipoprotein cholesterol, LDL-C)、高密度脂蛋白胆固醇(high density lipoprotein cholesterol, HDL-C)和糖化血红蛋白(glycosylated hemoglobin, HbAlC)水平的变化。**结果:**治疗后,两组患者空腹血糖、餐后 2 h 血糖水平均较治疗前明显降低,餐后 2 h 血清 C 肽水平均较治疗前明显升高,且研究组以上指标的改善程度较对照组更明显($P<0.05$)。两组患者治疗前后空腹血清 C 肽水平比较差异无统计学意义($P>0.05$);治疗后,两组患者 BMI、TC、TG、LDL-C 和 HbAlC 水平均较治疗前显著降低,HDL-C 水平明显升高,而研究组 BMI、TC、TG、LDL-C 和 HbAlC 水平显著低于对照组($P<0.05$),HDL-C 水平明显高于对照组($P<0.05$)。**结论:**格列美脲片联合艾塞那肽治疗肥胖 2 型糖尿病可有效的控制患者血糖,降低 BMI,改善血脂水平。

**关键词:**肥胖;2 型糖尿病;格列美脲;艾塞那肽

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# Therapeutic Effect of Glimepiride Combined with Exenatide on the Obese Type 2 Diabetes Mellitus*

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**ABSTRACT Objective:** To investigate the clinical effects of glimepiride combined with exenatide in the treatment of obese type 2 diabetes. **Methods:** Eighty-two obese patients with type 2 diabetes admitted to our hospital from January 2016 to January 2019 were randomly divided into study group and control group, there were 41 cases in each group. The patients in study group were treated with glimepiride combination with exenatide, the patients in the control group were treated with glimepiride alone. The changes of levels of the fasting and 2h postprandial blood glucose, serum C-peptide, body mass index (BMI), total cholesterol (TC), triglyceride (triglyceride, TG), low density lipoprotein cholesterol (LDL-C), high density lipoprotein cholesterol (HDL-C) and glycosylated hemoglobin (HbAlC) before and after treatment were observed and compared. **Results:** After treatment, the fasting blood glucose and the blood glucose levels in the two groups were significantly lower than those before treatment. The 2 h postprandial C-peptide level in serum was significantly higher than that before the treatment, and the improvement of the above indicators in the study group was more than that of the control group ($P < 0.05$). There was no significant difference in fasting serum C-peptide levels in the two groups before and after treatment ($P>0.05$). After treatment, the BMI, TC, TG, LDL-C and HbAlC levels in the two groups were significantly lower than those before treatment. The level of HDL-C was significantly increased. The levels of BMI, TC, TG, LDL-C and HbAlC in the study group were significantly lower than those in the control group ($P<0.05$), and the HDL-C level was significantly higher than the control group ($P<0.05$). **Conclusion:** Glimepiride tablets combined with exenatide in the treatment of obese type 2 diabetes can effectively control blood sugar, reduce BMI and improve blood lipid levels.

**Key words:** Obesity; Type 2 diabetes; Glimepiride; Exenatide

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## 前言

糖尿病(Diabetes mellitus,DM)是由于机体内胰岛素分泌缺陷或其生物功能受损引起的以高血糖为特征的代谢性疾病,临

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床上以 2 型糖尿病患者较为多见，这类患者在发病前常有肥胖[1-3]。随着社会经济不断发展和人民生活水平提高，DM 的发病率逐年升高，根据 WHO 估计，至 2025 年全球 DM 患者增加值 3.7 亿，而 90%以上为 2 型 DM 患者[4-6]。糖尿病无法根治，患者治疗选择口服降糖药物或注射胰岛素，但是在长期治疗过程中口服药量增加的情况下，患者血糖仍然得不到理想的控制，而增大剂量会增加体重的风险，加速患者慢性并发症的发生[7,8]。我院近三年采用格列美年联合艾塞那肽治疗肥胖 2 型 DM 患者取得了一定的临床疗效，结果报道如下。

## 1 资料与方法

### 1.1 一般资料

选择 2016 年 1 月至 2019 年 1 月我院收治的肥胖 82 例 2 型糖尿病患者为研究对象，将其随机的分为研究组和对照组，每组 41 例患者。两组患者的一般临床数据资料的比较差异无统计学意义，具有可比性($P$>0.05)，具体见表 1。

**表 1 两组患者的基线临床资料比较**

Table 1 Comparison of the general clinical data between two groups of patients

| Groups | Cases | Male/female | Age | Average age (years) | BMI | Average disease duration (years) |
|---|---|---|---|---|---|---|
| Research group | 41 | 19/22 | 32~77 | 52.62± 4.69 | 28.68± 2.41 | 4.62± 1.35 |
| Control group | 41 | 18/23 | 34~78 | 53.21± 5.08 | 28.91± 2.54 | 4.48± 1.29 |
| $x^2$/t | - | 0.318 | - | 0.437 | 0.819 | 0.575 |
| $P$ | - | >0.05 | - | >0.05 | >0.05 | >0.05 |

### 1.2 纳入和排除标准

纳入标准：WHO 制定的 DM 诊断标准是所有患者临床诊断都符合的：血糖水平为空腹≥ 7.0 mmol/L 或用餐两小时后≥ 11.1 mmol/L[9-11]。

排除标准：将合并有 DM 急性并发症和心血管疾病，严重胃肠疾病，胰腺炎，胆结石，肝肾功能异常和 BMI<25 的患者排除[12,13]。

### 1.3 治疗方法

对照组：本组患者给予格列美脲片(商品名：力贻苹；生产企业：重庆康刻尔制药有限公司；批准文号：国药准字 H20010543；规格：1 mg/ 片)进行治疗，起始剂量为 1 mg/d，如果患者血糖得不到有效的控制可逐渐增加之 4 mg/d。

研究组：在对照组治疗的基础上联合使用艾塞那肽(商品名：百泌达；生产企业：瑞典 AstraZeneca AB；批准文号：注册证号 H20140822；规格：10 μg/ 支)进行治疗，5 μg/ 次，2 次 /d，从第二个月开始，10 μg/ 次，2 次 /d。

### 1.4 观察指标

对比观察治疗前后两组患者 BMI、空腹血糖、餐后 2 h 血糖、空腹血清 C 肽、餐后 2 h 血清 C 肽、甘油三酯(Triglyceride，TG)、血清总胆固醇(Total cholesterol，TC)、高密度脂蛋白(High density lipoprotein，HDL-C)、低密度脂蛋白(Low density lipoprotein，LDL-C)、糖化血红蛋白(Glycated hemoglobin，HbAlC)水平的变化情况。

### 1.5 统计学方法

采用 SPSS19.0 软件对本研究数据进行统计学分析，分别以百分率和均数± 标准差($\bar{x}\pm s$)表示计数资料和计量资料，组间比较采用 $x^2$ 或 t 检验，以 $P$<0.05 为差异具有统计学意义。

## 2 结果

### 2.1 两组患者治疗前后的血糖指标水平变化的比较

治疗后，两组患者空腹血糖、餐后 2 h 血糖水平均明显降低，餐后 2 h 血清 C 肽水平均明显升高，研究组以上指标的改善程度更为明显($P$<0.05)，两组患者治疗前后空血清 C 肽水平比较差异无统计学意义($P$>0.05)，详见表 2。

**表 2 两组患者治疗前后血糖指标水平的变化情况比较($\bar{x}\pm s$，mmol/L)**

Table 2 Comparison of the changes of blood glucose index between the two groups before and after treatment($\bar{x}\pm s$, mmol/L)

| Groups | | Fasting blood sugar | 2 h blood sugar after meal | Fasting serum C-peptide | 2 h serum C-peptide after meal |
|---|---|---|---|---|---|
| Research group(n=41) | Before treatment | 11.38± 2.16 | 16.44± 3.29 | 0.61± 0.19 | 1.24± 0.62 |
| | After treatment | 6.78± 1.87*# | 8.43± 2.76*# | 0.71± 0.17 | 2.11± 0.33*# |
| Control group (n=41) | Before treatment | 11.20± 2.09 | 15.90± 3.36 | 0.62± 0.20 | 1.27± 0.59 |
| | After treatment | 7.86± 1.92* | 10.21± 2.84* | 0.70± 0.16 | 1.66± 0.37* |

Note: *$P$<0.05, compared with before treatment, #$P$<0.05, compared with the control group after treatment.

### 2.2 两组患者治疗前后 BMI 水平的比较

两组患者治疗前 BMI 水平比较差异无统计学意义 ($P$>0.05)，两组患者治疗后 BMI 水平都较治疗前显著降低，并且研究组患者 BMI 水平明显低于对照组患者($P$<0.05)，具体见表 3。

### 2.3 两组患者治疗前后血脂水平和 HbAlC 水平的比较

两组患者治疗前 TC、TG、LDL-C、HDL-C 和 HbAlC 比较差异均无统计学意义 ($P$>0.05)，两组患者治疗后 TC、TG、

LDL-C 和 HbAlC 水平较治疗前明显降低，HDL-C 水平明显升高，研究组患者各项指标改善程度明显优于对照组($P<0.05$)，详见表 4。

表 3 两组患者治疗前后的 BMI 水平比较情况($\bar{x}\pm s$)

Table 3 Comparison of the BMI levels between the two groups before and after treatment($\bar{x}\pm s$)

| Groups | Cases | Before treatment | After treatment |
|---|---|---|---|
| Research group | 41 | 28.68± 2.41 | 25.11± 1.67* |
| Control group | 41 | 28.91± 2.54 | 27.26± 1.82*# |

Note: *$P$<0.05, compared with before treatment, #$P$<0.05, compared with the control group after treatment.

表 4 两组患者治疗前后血脂水平和 HbAlC 水平的比较($\bar{x}\pm s$)

Table 4 Comparison of the blood lipid levels and HbAlC levels between the two groups before and after treatment($\bar{x}\pm s$)

| Groups | | TC(mmol/L) | TG(mmol/L) | HDL-C(mmol/L) | LDL-C(mmol/L) | HbAlC(%) |
|---|---|---|---|---|---|---|
| Research group (n=41) | Before treatment | 6.38 ± 1.67 | 2.89 ± 1.32 | 1.10 ± 0.67 | 3.57 ± 0.88 | 9.18 ± 1.65 |
| | After treatment | 4.61 ± 1.21*# | 1.56 ± 0.91*# | 1.63 ± 0.31*# | 2.35 ± 1.51*# | 5.42 ± 1.22*# |
| Control group (n=41) | Before treatment | 6.24 ± 1.71 | 2.92 ± 1.38 | 1.13 ± 0.71 | 3.61 ± 0.91 | 9.01 ± 1.57 |
| | After treatment | 5.39 ± 1.34* | 2.34 ± 1.05* | 1.32 ± 0.35* | 3.12 ± 1.49* | 7.63 ± 1.45* |

Note: *$P$<0.05, compared with before treatment, #$P$<0.05, compared with the control group after treatment.

## 3 讨论

中国糖尿病和代谢病流行病学调查研究结果显示 2 型糖尿病患者中有 40%以上的患者超重 [14]，25%的患者存在肥胖，这对中国糖尿病治疗而言是巨大的挑战[15,16]。2 型糖尿病的临床治疗以控制患者血糖、保护胰岛细胞功能和减轻体重为主要目标[17-19]。格列美脲(Glimepiride)属于第三代磺酰脲类降血糖药[20]，由于其有促进肌肉组织对外周葡萄糖的摄取和胰岛素分泌、抑制肝葡萄糖合成的作用，因此适用于运动疗法、单纯控制饮食法，以及减重都不能很好的控制血糖水平的 2 型糖尿病患者，该药物的作用机制是通过与胰腺 β- 细胞表面的磺酰脲受体结合[21,22]，此受体与 ATP 敏感的 $K^+$(KATP)通道相耦连，促使 KATP 通道关闭，引起细胞膜的去极化，使电压依赖性钙通道开放，$Ga^{2+}$ 内流而促使胰岛素的释放，并抑制肝葡萄糖的合成[23,24]。

从肠内释放入循环中的肠降血糖素可以促进葡萄糖依赖性胰岛素分泌，并且表现出其他降血糖药的作用，可以模拟葡萄糖依赖性胰岛素分泌增强作用和肠降血糖素其他降血糖药作用的拟肠降血糖素药艾塞那肽(exenatideacetate)[25,26]。体外研究显示肠降血糖素可以与已知的人类 GLP-1 受体结合并活化[27,28]，说明在葡萄糖浓度升高的情况下，通过包括 cAMP 和 / 或其他细胞内信号传导机制促使葡萄糖依赖性胰岛素合成及胰岛 β 细胞在体内分泌胰岛素增加，艾塞那肽可以促进 β 细胞中释放胰岛素，艾塞那肽可以模拟 GLP-1 的某种降血糖药作用在体内给药后[29,30]。本研究中，研究组患者使用格列美脲联合艾塞那肽治疗后脂各项改善情况、血糖控制血和 BMI 降低情况都明显优于对照组，提示两者联合使用后能够较好的控制血糖，降低患者体质量，改善血脂水平。

综上所述，格列美脲片联合艾塞那肽治疗肥胖 2 型糖尿病可有效的控制患者血糖，降低 BMI，改善血脂水平。

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