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TCF7L2基因多态性与糖代谢障碍易感性的研究进展

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摘要：严重烧创伤及大手术后患者易发生以高糖血症为表征的糖代谢障碍，又称外科糖尿病，可严重影响预后。临床发现，即使在致伤原因相同及病情相似的患者间，这种糖代谢障碍表现程度及糖药物的反应上也存在明显个体差异性，目前机制不明。近年来，全基因组关联研究(GWAS)发现两者密切相关，如转录因子7类似物2(TCF7L2)、过氧化物酶体增殖物激活受体 γ (PPAR γ)等，已被证实与糖代谢障碍关联性最强，而TCF7L2基因多态性与外科糖尿病发病个体化差异是否相关，TCF7L2基因多态性与糖代谢障碍的关系作一综述，以期为从遗传学角度研究烧创伤后糖代谢障碍提供参考。

关键词：葡萄糖代谢障碍；烧伤；TCF7L2；基因多态性

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参考文献：

- [1] Gauglitz GG, Herndon DN, Kulp GA, et al. Abnormal insulin sensitivity persists in pediatric patients post-burn[J]. J Clin Endocrinol Metab, 2009, 94(5): 1656-1664.
- [2] McCarthy MI. Genomics, type 2 diabetes, and obesity[J]. N Engl J Med, 2010, 362(13): 1194-1196.
- [3] Mondal AK, Das SK, Baldini G, et al. Genotype and tissue-specific effects on splicing of the transcription factor 7-like 2 gene in humans[J]. J Clin Endocrinol Metab, 2009, 150(11): 1450-1457.
- [4] Osmark P, Hansson O, Jonsson A, et al. Unique splicing pattern of the TCF7L2 gene in pancreatic islets[J]. Diabetologia, 2009, 52(5): 850-854.
- [5] Grant SF, Thorleifsson G, Reynisdottir I, et al. Variant of transcription factor 7-like 2 gene confers risk of type 2 diabetes[J]. Nat Genet, 2006, 38(3): 320-323.
- [6] Florez JC, Jablonski KA, Bayley N, et al. TCF7L2 polymorphisms and progression

[7] Peng S, Zhu Y, Lü B, et al. TCF7L2 gene polymorphisms and type 2 diabetes risk and updated meta-analysis involving 121,174 subjects[J]. Mutagenesis, 2013, 28(1): 2

[8] Pappa KI, Gazouli M, Economou K, et al. Gestational diabetes mellitus shares genes associated with insulin resistance and type 2 diabetes in the Greek population[J]. Endocrinol, 2011, 27(4): 267–272.

[9] Kang ES, Kim MS, Kim YS, et al. A variant of the transcription factor 7-like 1 gene is associated with the risk of posttransplantation diabetes mellitus in renal allograft recipients[J]. Transplant Proc, 2011, 43(1): 63–68.

[10] Dayeh TA, Olsson AH, Volkov P, et al. Identification of CpG-SNPs associated with type 2 diabetes and differential DNA methylation in human pancreatic islets[J]. Diabetologia, 2010, 53(8): 1036–1046.

[11] Savic D, Ye H, Aneas I, et al. Alterations in TCF7L2 expression define its role as a regulator of glucose metabolism[J]. Genome Res, 2011, 21(9): 1417–1425.

[12] Savic D, Bell GI, Nobrega MA. An in vivo cis-regulatory screen at the type 2 diabetes-associated TCF7L2 locus identifies multiple tissue-specific enhancers[J]. PLoS One, 2011, 6(1): e16700.

[13] Savic D, Park SY, Bailey KA, et al. In vitro scan for enhancers at the TCF7L2 locus[J]. Diabetologia, 2013, 56(1): 121–125.

[14] Wang ET, Sandberg R, Luo S, et al. Alternative isoform regulation in human transcriptomes[J]. Nature, 2008, 456(7221): 470–476.

[15] Le Bacquer O, Shu L, Marchand M, et al. TCF7L2 splice variants have distinct effects on cell turnover and function[J]. Hum Mol Genet, 2011, 20(10): 1906–1915.

[16] Weise A, Bruser K, Elfert S, et al. Alternative splicing of Tcf7l2 transcripts generates protein variants with differential promoter-binding and transcriptional activation properties[J]. Nucleic Acids Res, 2010, 38(6): 1964–1981.

[17] Locke JM, Da Silva Xavier G, Rutter GA, et al. An alternative polyadenylation site generates isoforms that inhibit T cell factor/lymphoid-enhancer factor (TCF/LEF)-dependent gene expression[J]. Diabetologia, 2011, 54(12): 3078–3082.

[18] Kaminska D, Pihlajamäki J. Regulation of alternative splicing in obesity and diabetes[J]. Adipocyte, 2013, 2(3): 143–147.

[19] Gaulton KJ, Nammo T, Pasquali L, et al. A map of open chromatin in human pancreatic islets[J]. Nat Genet, 2010, 42(3): 255–259.

[20] Elfert S, Weise A, Bruser K, et al. Acetylation of human TCF4 (TCF7L2) protein by HBP1 inhibits its transcriptional activity and induces a conformational change in the TCF4: DNAbinding domain[J]. PLoS One, 2013, 8(4): e61867.

[21] da Silva Xavier G, Mondragon A, Sun G, et al. Abnormal glucose tolerance and impaired glucose homeostasis in pancreas-specific Tcf7l2-null mice[J]. Diabetologia, 2012, 55(10): 2667–2676.

[22] Shu L, Sauter NS, Schulthess FT, et al. Transcription factor 7-like 2 regulates survival and function in human pancreatic islets[J]. *Diabetes*, 2008, 57(3): 645–653.

[23] Zhou Y, Zhang E, Berggreen C, et al. Survival of pancreatic beta cells is p a TCF7L2-p53-p53INP1-dependent pathway[J]. *Hum Mol Genet*, 2012, 21(1): 196–207.

[24] Le Bacquer O, Kerr-Conte J, Gargani S, et al. TCF7L2 rs7903146 impairs islet morphology in non-diabetic individuals[J]. *Diabetologia*, 2012, 55(10): 2677–2681.

[25] Lyssenko V, Lupi R, Marchetti P, et al. Mechanisms by which common variants increase risk of type 2 diabetes[J]. *J Clin Invest*, 2007, 117(8): 2155–2163.

[26] Shu L, Matveyenko AV, Kerr-Conte J, et al. Decreased TCF7L2 protein levels mellitus correlate with downregulation of GIP- and GLP-1 receptors and impaired beta-cell function[J]. *Hum Mol Genet*, 2009, 18(13): 2388–2399.

[27] Pilgaard K, Jensen CB, Schou JH, et al. The T allele of rs7903146 TCF7L2 is impaired insulinotropic action of incretin hormones, reduced 24 h profiles of plasma glucagon, and increased hepatic glucose production in young healthy men[J]. *Diabetologia*, 2007, 50(10): 1298–1307.

[28] Loos RJ, Franks PW, Francis RW, et al. TCF7L2 polymorphisms modulate proinsulin conversion and beta-cell function in a British European population[J]. *Diabetes*, 2007, 56(7): 1943–1950.

[29] da Silva Xavier G, Loder MK, McDonald A, et al. TCF7L2 regulates late event secretion from pancreatic islet beta-cells[J]. *Diabetes*, 2009, 58(4): 894–905.

[30] Damcott CM, Pollin TI, Reinhart LJ, et al. Polymorphisms in the transcription factor 7-like 2 (TCF7L2) gene are associated with type 2 diabetes in the Amish: replication and evidence for both insulin secretion and insulin resistance[J]. *Diabetes*, 2006, 55(9): 2654–2659.

[31] Kaminska D, Kuulasmaa T, Venesmaa S, et al. Adipose tissue TCF7L2 splicing and weight loss and associates with glucose and fatty acid metabolism[J]. *Diabetes*, 2012, 61(11): 3290–3297.

[32] Villareal DT, Robertson H, Bell GI, et al. TCF7L2 variant rs7903146 affects diabetes by modulating incretin action[J]. *Diabetes*, 2010, 59(2): 479–485.

[33] Norton L, Fourcaudot M, Abdul-Ghani MA, et al. Chromatin occupancy of transcription factor 7-like 2 (TCF7L2) and its role in hepatic glucose metabolism[J]. *Diabetologia*, 2011, 54(10): 2533–2541.

[34] Shao W, Wang D, Chiang YT, et al. The Wnt signaling pathway effector TCF7L2 controls brain proglucagon gene expression and glucose homeostasis[J]. *Diabetes*, 2013, 62(3): 750–758.

[35] Grant SF. Understanding the elusive mechanism of action of TCF7L2 in metabolic studies: PAI-1 and risk for mortality after burn injury[J]. *J Burn Care Res*, 2008, 29(6): 2657–2658.

[36] Barber RC, Chang LY, Lemaire SM, et al. Epistatic interactions are critical in studies: PAI-1 and risk for mortality after burn injury[J]. *J Burn Care Res*, 2008, 29(6): 2657–2658.

[37] Barber RC, Aragaki CC, Chang LY, et al. CD14-159 C allele is associated with mortality after burn injury[J]. *Shock*, 2007, 27(3): 232–237.

综 述

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