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Health-related quality of life in patients with type 2 diabetes mellitus in a rural area

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Objective: To discern health-related quality of life of patients with type 2 diabetes mellitus in a rural area of south-eastern Spain.

Methodology: A transversal descriptive study in which we analysed the link between development of the type 2 diabetes mellitus disease process and the quality of life of these patients. The SF-36 health survey was used as a tool during our study. A simple random sampling was carried out on diabetic patients (N=491), sample size precision 3%, confidence level 95% and 15% compensation for loss resulting in a sample of N=169. The data was analysed with SPSS 18.0 software.

Results: The type 2 diabetic population has a quality of life score of more than 50 in most of the survey's aspects. We found the lowest scores for the aspect of "Bodily Pain" (48.5). Extremely high scores were found for the aspects: "Physical Functioning" (75.5), "Role-Physical" (87.8) and "Role-Emotional" (84.7). Statistically significant differences were observed between men and women for "Bodily Pain" and "Social Functioning" (p<0.001). Patients over 60 have higher scores for "Bodily Pain" (p<0.001).

Conclusions: Type 2 diabetes mellitus is associated with poor self-perceived health-related quality of life (HRQOL). The HRQOL of female diabetic patients is especially affected. Diabetic patients perceive a decrease in satisfaction with their health as their age increases.

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Non-enzymatic glycation of human serum albumin with D-glucose generates neo-epitopes deciphering immunological potential to generate antibodies in diabetes mellitus and its associated complications

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Non-enzymatic glycation involves rearrangement and covalent attachment of reducing sugars to reactive residues in proteins. HSA incubated for 40 days, conferred the formation of advanced glycation end products (AGEs) that play role in progression of immunological complications. We present an approach using high pressure liquid chromatography, CHNS analysis, scanning electron microscopy, X-ray diffraction, fluorescence to identify AGEs that were further used as probe to detect antibodies in serum of diabetes mellitus patients with type 2 (T2DM), type 1 (T1DM), gestational (GDM) and type 2 with chronic kidney disease (T2DM+CKD) with direct binding and inhibition ELISA. Affinity purified immunoglobulin G (IgG) further probe to determine specificity with direct binding and inhibition ELISA. Biophysical analysis of native and glycated HSA showed severe damage to its structure and function. High titre of antibodies and percent inhibition was found in following order T2DM+CKD>T2DM>GDM>T1DM compared to healthy. Similarly affinity purified IgG showed high specificity in following order T2DM+CKD>T2DM>GDM>T1DM compared to healthy. Glycation alters the structure and function of HSA that imparts the formation of neoepitopes, recognized as foreign bodies by immune cells and formed autoantibodies that prove to be novel biomarker for detection of immunological progressive complications associated with diabetes mellitus.

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