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Depression, type-2 diabetes and intimal dysfunction

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Diabetic patients are more likely to develop depressive disorder or depressive symptoms, even after their glucose metabolic dysfunction is controlled. Similarly, patients with depressive symptoms are more likely to experience increased risk for type-2 diabetes. Dietary patterns, namely 'comfort foods' with high fat and sugar, are associated with higher risk for depressive disorders. This particular dietary pattern is associated with higher risk for type-2 diabetes and dysfunction of the intimae of blood vessels, as well. On the other hand, long-term use of moderate doses of antidepressant (tricyclic and serotonin-reuptake-inhibitor) drugs may be associated with an increased risk of diabetes. This increased risk is not infrequently heralded by increased weight gain. Added to that, depressive disorder is considered a standalone risk factor for coronary artery disease (CAD). Dysfunction in the intimae of blood vessels is currently considered a major event underlying this increased risk. In this presentation, it is assumed that inflammatory processes involving dysregulated cytokines, especially TNF-α, is liaising the course of these associations. An animal model of depression addressing the consistently unpredictable psychosocial chronic stresses, (chronic mild stress model), has been a good vehicle to study the associations between noxious dietary patterns and intimal dysfunction. We present here the results of several studies addressing the role of inflammatory-immune processes in explaining the aforementioned associations, in search for a sort of causality. Experimenting on drugs like thalidomide and pentoxifylline, which disrupt the availability of TNF-α, revealed some explanation to the above-mentioned associations. Their effects on the markers of glucose metabolism, in comparison with classical antidepressants were assessed. They considerably averted the expression of TNF-α in the intimae and hepatic cells of the experimental animals. Their effects on the circulating and Intimal progenitor cells were also, assessed.

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