PDH – piruvatodehidrogenase. Sensibilidade à insulina da PDH em linfócitos ativados. Falta de sensibilidade da PDH à insulina no ovário policístico e no diabetes melitus

Sensitivity of pyruvate dehydrogenase to insulin in activated T lymphocytes. Lack of responsiveness to insulin in patients with polycystic ovarian disease and diabetes.

Department of Medicine, University of Tennessee, Memphis 38163.

Using phytohemagglutinin-activated T lymphocytes, we studied possible mechanisms responsible for insulin resistance in patients with polycystic ovarian disease (PCO) and acanthosis nigricans (AN) by examining insulin binding to erythrocytes and activated T lymphocytes and T-lymphocyte pyruvate dehydrogenase (PDH) responsiveness to insulin in three groups. These groups of subjects consisted of six PCO-AN patients with normal glucose tolerance, six PCO-AN patients with mild non-insulin-dependent diabetes mellitus (NIDDM), and six weight-matched control subjects. We found that insulin binding to both erythrocytes and activated T lymphocytes was significantly lower in PCO and PCO-NIDDM patients than control subjects but did not differ between the PCO groups. Insulin binding to erythrocytes and T lymphocytes varied inversely with basal insulin. In activated T lymphocytes of PCO-NIDDM patients, PDH responsiveness to both submaximal and maximal insulin concentrations was impaired, the extent of which varied in proportion to their degree of carbohydrate intolerance. In contrast, PDH responsiveness to maximal amounts of insulin in T lymphocytes of PCO patients without NIDDM was similar to the weight-matched control subjects. These data may suggest that lesions at the level of the receptor are primarily responsible for insulin resistance in patients with PCO but that both receptor and postreceptor defects (i.e., PDH responsiveness to insulin) contribute to the insulin-resistant state of PCO patients with NIDDM.

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