

Case and control study: higher prevalence of neuropathy in patients with secondary hyperparathyroidism

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Background: Diabetic neuropathy is frequent in the population with diabetic nephropathy (DN); however, there is no information about whether secondary hyperparathyroidism increases its incidence. The purpose of this study was to determine, through symptoms and signs, if there was neuropathy increased frequency in a group of patients with DN with hyperparathyroidism, compared to a control group. **Methods:** This is a case and control prospective observational study that was composed of patients with DN having 60 pg/ml serum parathormone (PTH) values, named control group (CG). The Hyperparathyroidism group (HG) was formed by patients with DN and ≥ 60 pg/ml PTH values. The variables were: body-mass index, diabetes evolution time, and presence of diabetic neuropathy (Michigan Test). The minimum calculated sample consisted of 60 cases in each group. The variables on scale were compared to the Student's t-test and the percentages to Chi2. **Results:** There were 60 cases in each group: 35 (58.3%) men in CG versus 33 (55.0%) in HG ($P = 0.713$). The age for CG was 67 ± 11.0 years vs 72 ± 11 for HG ($P = 0.009$). The glomerular filtration in CG was 53.82 ± 25.13 , and in HG, it was 35.34 ± 18.43 ml/min/1.73 m² ($P = 0.001$). The PTH in CG was 38.02 ± 15.32 pg/ml, and in HG, it was 119.07 ± 84.33 pg/ml ($P = 0.001$). The neuropathy through symptoms in CG was 28.3 % while in HG, it was 36.6% ($P = 0.330$). The neuropathy through signs in CG was 38.3%, and in HG, it was 83.3% ($P = 0.001$). The odds ratio for HG to present neuropathy through signs was 8.044 (IC95% 3.42 – 18.92).

Conclusion: In the subjects suffering from diabetic nephropathy who were studied, neuropathy had more prevalence in the group affected with secondary hyperparathyroidism. Therefore, statistical association was evident between secondary hyperthyroidism and the presence of diabetic neuropathy in patients with DN. **Key words:** Secondary hyperparathyroidism, complications, diabetic neuropathy, renal failure, adult.