

P 4232**Cancer in Machado Joseph Disease**

Gabriele Nunes Souza, Nathália Kersting dos Santos, Daphne Louise Oliveira Pacheco, Maria Luiza Saraiva-Pereira, Jonas Alex Morales Saute, Laura Bannach Jardim
Hospital de Clínicas de Porto Alegre (HCPA)

Recent publications reported a reduced risk of cancer in carriers of polyglutamine diseases such as Huntington disease. This association was not studied in spinocerebellar ataxia type 3 /Machado-Joseph disease (SCA3/MJD) yet. Aims 1) compare the cumulative frequency of cancer in the last 15 years in individuals with SCA3/MJD, unrelated controls and the population of Porto Alegre (POA), Brazil; 2) compare the frequencies of cancer-related deaths in SCA3/MJD and a control group. Methods: Cross-sectional study in which we interviewed SCA3/MJD patients from the HCPA/Neurogenetics Clinic cohort and unrelated controls. The cumulative incidence of cancer in the last 15 years in POA was provided by the National Cancer Institute (INCA) reports. Data related to death causes of cases and age and sex-matched deceased controls (from 2000); were provided by the Mortality Information System of Rio Grande do Sul. Results: 154 symptomatic SCA3/MJD individuals and 80 unrelated controls with similar ages and gender ($p=ns$) were interviewed. In the SCA3/MJD and control groups, there were 7/154 (4.5%) and 5/80 (6.3%) cases of cancer. According to INCA data, the 15y cumulative incidence of cancer in POA was 6%. For an absolute risk reduction (ARR) of 1.8 % between cases and controls, and of 1.5% between cases and the population, 1,938 individuals per group or 1,886 cases would be needed to achieve a 80% power to detect a significant difference. Up to now, 55 deaths (26 men, 47%; 41 families) were identified in SCA3/MJD individuals, with a mean age at death of 50.5 ± 14 and disease duration of 14.5y. 108 deceased controls (51 men, 47%) were identified. Cancer was the cause of death in 4/55 (7.3%) SCA3/MJD and in 27/108 (25%) control individuals, with an ARR of 17.7% for the SCA3/MJD group ($\chi^2=7,43$; $p=0.006$). Conclusion: The total population of individuals with SCA3/MJD in our state (around 700) is smaller than the number of cases required to show significant differences in the incidence of cancer. On the other hand, the case-control study of death causes are compatible with the hypothesis that the presence of the polyglutamine tract in cells protect against cancer development. Projeto aprovado pelo CEP HCPA. Keywords: Cancer, Machado-Joseph disease, death. Projeto 140204