

Incidence of Pituitary Adenomas in Western Sweden in 2001-2011



Kerstin Gunnarsson^{*1}, Axel Tjörnstrand^{*1}, Max Evert^{*1}, Erik Holmberg², Thord Rosén^{1,3}, Lise-Lott Norrman^{1,3}, Oskar Ragnarsson^{1,3}, Helena Filipsson Nyström^{1,3}

^{*} equal work contribution. ¹Sahlgrenska Academy, University of Gothenburg, Sweden ²Department of Oncology Institute of Clinical Sciences Sahlgrenska Academy at University of Gothenburg ³Sahlgrenska University Hospital, Department of Endocrinology, Gothenburg, Sweden

Conclusions: This is the largest study on the incidence of pituitary adenomas (PAs) from a population of 1.6 million inhabitants. The incidence is 3.9 / 100 000 individuals and year. The study is conducted during times of frequent use of medical imaging and confirms an increased incidence of PAs. The life-time risk of PAs in men is 0.27% and in women 0.29%.

Introduction: The number of studies on the incidence of pituitary adenomas (PAs) is limited. The aim of this study was to evaluate the annual incidence of PAs in a region in Sweden, with a targeted population of 1.6 million inhabitants.

Methods: Data from adult patients diagnosed with PA in 2001-2011, living in the Västra Götaland County (in dark blue on the map), were collected from the Swedish Pituitary Registry (SPR). In addition, medical records on all patients diagnosed with PA at the six hospitals in the region were reviewed and patients were included in the SPR if not registered before. Patients with non-functioning PA (NFPA) >3 mm and hormone producing PAs (in total n=592 patients) were included in the analyses. Age standardized incidence rates (SIR), given as rate/100000 inhabitants (95% confidence intervals), were calculated using the WHO 2000 standard population as a reference.



Results:

◆ The total SIR for PAs during the study period was 3.9/100000. SIR for men was 3.3/100000 and increased with increasing age. In women, SIR was 4.7/100000 with the highest incidence in the ages 25-34 years, corresponding to a high frequency of prolactinomas (Figure A & B)

◆ NFPA was the most common PA (54.1%) with SIR of 1.8/100000. (Figure A)

◆ Prolactinomas were detected in 32% (SIR 1.6/100000), acromegaly in 9% (SIR 0.35/100000), Cushing's disease in 4% (SIR 0.18/100000) and TSH-producing adenomas in 0.7% (SIR 0.03/100000 (Figure A)

◆ The frequencies of macroadenoma in NFPA, prolactinomas, GH-, ACTH- and TSH-producing adenomas were 82%, 37%, 77%, 28%, and 100%, respectively. (Figure C)

◆ The life-time risk of PAs in men was 0.27% (0.24-0.31) and in women 0.29% (0.26-0.33).

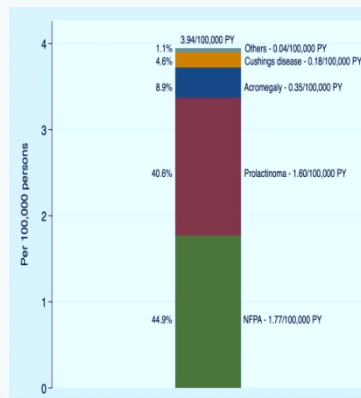


Figure A Incidence rates and frequencies of PAs and its subtypes

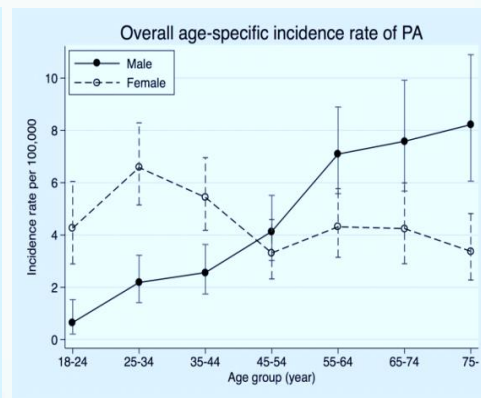


Figure B Age-specific incidence rates of PAs

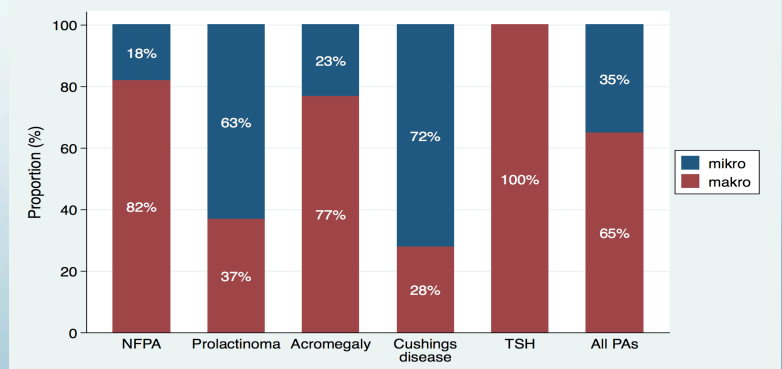


Figure C The frequencies of makroadenomas and mikroadenomas in the cohort of pituitary adenomas and its subtypes