Göteborg, 2024

Primary Aldosteronism; a growing challenge

Akademisk avhandling

Som för avläggande av medicine doktorsexamen vid Sahlgrenska akademin, Göteborgs universitet kommer att offentligen försvaras i hörsal Arvid Carlsson, Academicum, Medicinaregatan 3, Göteborg, torsdagen den 28 november, klockan 09.00

av Eleftheria Gkaniatsa

Fakultetsopponent:
Felix Beuschlein, Professor
University Hospital Zurich Switzerland

Avhandlingen baseras på följande delarbeten

I. Gkaniatsa E, Ekerstad E, Gavric M, Muth A, Trimpou P, Olsson DS, Johannsson G, Ragnarsson O. **Increasing Incidence of Primary Aldosteronism in Western Sweden During 3 Decades - Yet An Underdiagnosed Disorder.** *J Clin Endocrinol Metab. 2021;106:e3603-e3610*

II. Gkaniatsa E, Sakinis A, Palmér M, Muth A, Trimpou P, Ragnarsson O. Adrenal **Venous Sampling in Young Patients with Primary Aldosteronism. Extravagance or Irreplaceable?** *J Clin Endocrinol Metab. 2021;106:e2087-e2095*

III. Gkaniatsa E, Zverkova Sandström T, Rosengren A, Trimpou P, Olsson DS, Lind M, Muth A, Johannsson G, Ragnarsson O. **Mortality in Patients With Primary Aldosteronism: A Swedish Nationwide Study.** *Hypertension. 2023;80:2601-2610*

IV. Gkaniatsa E, Sandström TZ, Rosengren A, Trimpou P, Muth A, Johannsson G, Ragnarsson O. **Hip fractures in patients with primary aldosteronism - a Swedish nationwide study.** *Osteoporos Int. 2024;35:1585-1593*

SAHLGRENSKA AKADEMIN
INSTITUTIONEN FÖR MEDICIN

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Abstract

Primary aldosteronism (PA), caused by excessive aldosterone production, is a frequently overlooked cause of hypertension. Cardiovascular complications are more common in patients with PA than patients with essential hypertension. However, disease-specific treatment with either mineralocorticoid receptor antagonists (MRAs) or unilateral adrenalectomy, effectively reduces the risk for these complications. The aim with this thesis was to investigate several contentious issues related to epidemiology, subtype classification, and treatment of patients with PA. The key findings are summarized below.

The incidence of PA in Region Västra Götaland has increased from 2 patients per million in 1987–1996 to 17 patients per million in 2007–2016. Despite this, PA is still significantly underdiagnosed.

International guidelines postulate that adrenal venous sampling (AVS) is not necessary to confirm unilateral PA in young adults with visible adenoma on imaging. However, our review of 45 young patients (<40 years of age) who had undergone AVS at our institution showed that 20% of these patients would have received inappropriate treatment based solely on imaging studies.

A nationwide cohort study of 2419 patients with PA showed that mortality was increased compared to age- and sex-matched controls from the general population (HR 1.23, 95% CI 1.10–1.38), especially in patients with established cardiovascular disease or age >56 years at the time of diagnosis and in patients treated with low doses of MRAs, but not in patients treated with adrenalectomy. Patients with PA also had an increased risk of hip fracture (HR 1.55, 95% CI 1.18–2.03), especially women and patients diagnosed at an older age as well as patients treated with an MRA.

To conclude, PA is an underdiagnosed and undertreated condition that can lead to cardiovascular complications, hip fractures, and increased mortality. Early and targeted treatment improves patient outcome.

Keywords: hyperaldosteronism, incidence, mortality, hip fractures

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