LEARNING THE ROPES: ASPECTS ON MALE VS. FEMALE SEX IN HYPERTENSION

Epidemiology and risk: Western perspective

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Hypertension is a widespread condition which is associated with a well-known risk of cardiovascular disease and premature death. At the same time, treatment of hypertension is well-established, and we can choose between several evidence-based treatment strategies.

Cardiovascular disease plays a major role for both men and women, but women are affected later in life than men are ⁽¹⁾. Women are also exposed to gender specific conditions such as preeclampsia and hypertension during treatment with oral contraception.

This begs the question: Is the development of increased blood pressure different between the genders and is treatment and control of high blood pressure diverse with respect to gender? Furthermore, what is specific regarding the European perspective?

In a recently published, comprehensive, pooled analysis from 1200 studies in 184 countries covering 99 % of the world's population, the prevalence, detection, treatment, and control of hypertension were presented ⁽²⁾. The authors analyzed data on blood pressure levels and treatment from 1990 to 2019 in individuals aged 30–79 years in population-representative studies. More women than men were diagnosed with hypertension and the number of individuals with hypertension doubled during the time period. When focusing on high-income western countries, women in younger ages more often had well-controlled hypertension compared to men in 2019, with a shift towards better control in men in older ages. During the investigated time period, the rate of controlled hypertension increased for both genders, but more so in women. Despite these improvements, the rate of well-controlled hypertension only reached an unimpressive 50% in women in 2019. There were also relatively large differences within Europe, and even more within different regions characterized as high-income western countries. For example, Canada displayed high rates of individuals with well-controlled blood

pressure. Earlier this year, we presented data on 8-year trends in blood pressure and lipid-levels in a primary-care setting in a region in Sweden (n=259 753). In patients with a diagnosis of hypertension, but without ischemic heart disease or diabetes mellitus, the rate of blood pressure control increased from approximately 40 % to 50 % in 2017 without any detectable difference between the genders ⁽³⁾. The rate of lipid-level control barely improved at all during the same period.

It is interesting to compare countries and regions with similar socioeconomic structure and insurance and welfare systems. For example, how does Canada manage to attain target blood pressures to a greater extent than Sweden? Why do younger women in Europe more often have higher rates of well-controlled blood pressure compared to men of the same age? When health care and medication is publicly funded, which strategy is the best? This begs the question of how we should organize the detection and care of individuals with increased blood pressure? This is a field of research where we at present do not have any convincing evidence of the best way to act. We have shown that blood pressure control was better in patients with hypertension when antihypertensive treatment was managed primarily by specially trained nurses, compared to when antihypertensive treatment was managed by physicians ⁽⁴⁾. In another study, we also found that female physicians more often appear to reach the treatment goal for blood pressure in female patients ⁽⁵⁾.

The options today are plentiful; single-pill/poly-pill, opportunistic screening, home monitoring/office blood pressure, self-monitoring/health care professionals, physicians/nurses, telemonitoring/individual meeting with health professional? The questions are many, the answers are diverse.

In conclusion, hypertension in Europe (and the rest of the world) has increased over the last decades. The number

of individuals with well-controlled blood pressure has also increased to some extent, but insufficient treatment control and the unnecessary and avoidable cardiovascular disease which it results in, is still a challenge to the health care system. There is no evidence supporting a specific treatment strategy regarding women, but a better blood pressure control in younger ages in women could indicate that there exist some differences between the care of patients with hypertension.

References

1. Bots SH, Peters SAE, Woodward M. Sex differences in coronary heart disease and stroke mortality: a global assessment of the effect of ageing between 1980 and 2010. *BMJ Global Health* 2017;2:e000298. doi:10.1136/bmjgh-2017-000298

2. NCD Risk Factor Collaboration (NCD-RisC). Worldwide trends in hypertension prevalence and progress in treatment and control from 1990 to 2019: a pooled analysis of 1201 population-representative studies with 104 million participants. *Lancet* 2021, 398:957-980 www.thelancet.com Published online August 24, 2021 [https://doi.org/10.1016/S0140-6736\(21\)01330-1](https://doi.org/10.1016/S0140-6736(21)01330-1)

3. Johan-Emil Bager, Georgios Mourtzinis, Tobias Andersson, Jonatan Nätman, Annika Rosengren, Staffan Björck, Karin Manhem, Per Hjerpe. Trends in blood pressure, blood lipids, and smoking from 259 753 patients with hypertension in a Swedish primary care register: results from QregPV. *European Journal of Preventive Cardiology*, zwab087, <https://doi-org.ezproxy.ub.gu.se/10.1093/eurjpc/zwab087>

4. Ödesjö H, Adamsson Eryd S, Franzén S, Hjerpe P, Manhem K, Rosengren A, Thorn J, Björck S. Visit patterns at primary care centres and individual blood pressure level - a cross-sectional study. *Scand J Prim Health Care*. 2019 Mar;37(1):53-59. doi: 10.1080/02813432.2019.1569369. Epub 2019 Mar 1

5. Gunilla Journath, Mai-Lis Hellénus, Karin Manhem, Karin I Kjellgren, Peter M Nilsson, Hyper-Q Study Group, Sweden. Association of physician's sex with risk factor control in treated hypertensive patients from Swedish primary healthcare. *J Hypertens*. 2008 Oct;26(10):2050-6.

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