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Blood Pressure Medication can be detrimental in Old Age

Old and frail patients have an increased mortality risk and increased memory problems when their blood pressure is lowered too much through medication. This is what has been discovered by researchers from the University of Bern and University of Leiden (Netherlands) in a large-scale study – thus relativising the official recommendations for antihypertensive medications. They were awarded with the 2018 research prize by the *Kollegium für Hausarztmedizin* [College of General Medicine] for their work.

Lowering blood pressure by using medication helps many people and saves lives, particularly among patients aged 60 and over. At the same time, the population is ageing – people aged 80 and over constitute the fastest-growing age group in our society, yet, at the same time, prove the hardest group to research. The range of patients is broad: from severely handicapped 75-year-olds who live in nursing homes to 95-year-olds who still participate in sports. However, blood pressure guidelines often ignore this broad spectrum and – as is currently the case in the US – make the generally-accepted recommendation that blood pressure levels among all over-60s should be lowered to below 130mmHg.

“The lower the better” is one recommendation which applies for many people, including the elderly, as randomised studies were able to demonstrate. However, there can be a catch here, according to PD Sven Streit from the Institute of Primary Health Care (BIHAM) at the University of Bern: “Such studies exclude very old and frail people who have multiple illnesses and who are taking multiple types of medication. Thus, even results from the best of studies can only be applied to older people to a certain extent.”

However, general practitioners deal with the whole spectrum of very old people, i.e. a spectrum which includes those excluded from clinical studies. The group of patients under investigation included all inhabitants aged 85 of the city of Leiden in the Netherlands. This also accounted for patients suffering from dementia, living in nursing homes, or who are otherwise frail. The researchers discovered that antihypertensive medications led to an increased risk of mortality and to quicker cognitive decline among these patients. The study was published in the journal “Age and Ageing”.

Results generally applicable for the first time

From the just under 600 people investigated, Sven Streit and his colleagues from University of Leiden were able to demonstrate that the lower the extent to which blood pressure was reduced using antihypertensive medications, the higher the levels of total mortality and cognitive decline. This correlation only arose in those people who took antihypertensive medication, and particularly in those who were frail.

With this study, the researchers confirmed that which had already been speculated in previous observational studies. However, this is the first study whose results can be applied across the entire population. "Beforehand, the belief was already increasingly taking hold among general practitioners that additional antihypertensive therapy should only be recommended after an individual evaluation of its benefits and risks, especially in the case of frail patients", says Streit. "Now, we can prove that their belief was correct – contrary to official recommendations."

The pressing nature of this study also convinced the British Geriatric Society, who asked Streit for a contribution to their blog, as well as the Swiss *Kollegium für Hausarztmedizin*, which awarded the team, led by Streit, with the 2018 research prize, valued at CHF 10,000.00.

Publication details:

Streit S, Poortvliet RKE, Gussekloo J. *Lower blood pressure during antihypertensive treatment is associated with higher all-cause mortality and accelerated cognitive decline in the oldest-old – data from the Leiden 85-plus Study*. *Age and Ageing* 2018; 0: 1–6. <https://doi.org/10.1093/ageing/afy072>

Further information:

Link to publication: <https://doi.org/10.1093/ageing/afy072>

Link to the College of General Medicine prize: <https://www.khm-kongress.ch/khm2018/khmforschungspreis>

Link to the British Geriatric Society blog:

<https://britishgeriatricsociety.wordpress.com/2018/06/01/when-low-blood-pressure-is-too-low-in-old-age/>

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