

High levels of urinary albumin in the normal range predict hypertension

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Healthy individuals with higher levels of albumin excretion, even levels considered normal, are at increased risk of developing hypertension (high blood pressure), according to a study appearing in the October 2008 issue of the *Journal of the American Society Nephrology (JASN)*. The study suggests that to prevent cardiovascular disease, the definition of "normal" urinary albumin excretion should be reconsidered.

Because kidneys normally prevent large molecules such as albumin from being excreted in the urine, high levels of urinary albumin excretion—called albuminuria—can be an indicator of kidney damage. Albuminuria may also reflect dysfunction of endothelial cells throughout the body, which in turn may be a precursor to hypertension.

A variety of studies have shown that higher levels of urinary albumin excretion, even within the normal range, are associated with cardiovascular disease in individuals with diabetes or hypertension. However, less research has been done in low-risk populations. Therefore, it is unclear whether higher, although normal, levels of albumin in the urine might indicate that generally healthy individuals are at risk of developing cardiovascular disease, a condition that claims more than 800,000 lives each year.

To clarify the issue, Dr. John Forman and his colleagues at the Brigham and Women's Hospital in Boston, MA, looked at the new development of hypertension among 2,179 women without baseline hypertension or diabetes, and with normal levels of urine albumin, who were enrolled in

the Nurses' Health Studies, which are among the largest and longest running investigations of factors that influence women's health. The researchers discovered that higher levels of urinary albumin excretion, even within the range considered normal, increased an individual's risk of developing hypertension. Among older women (median age of 65 years), those with the highest levels of albumin excretion were 76% more likely to develop hypertension than those with the lowest levels. For younger women (median age of 44 years), the risk was 35% higher. These elevated risks held true when factors such body mass index, blood pressure, smoking, and family history of hypertension were taken into account.

The authors conclude that their results, in conjunction with the findings of various other studies, suggest that "it is time to re-evaluate our current concept of 'normal' albumin excretion." Hypertension monitoring and treatment of individuals with higher urine albumin levels, even which are within the currently defined normal range, may be warranted.

Source: American Society of Nephrology

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