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Prevalence and Characteristics of Adrenal Tumors in an Unselected Screening Population

A Cross-Sectional Study

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Visual Abstract. Prevalence of Adrenal Tumors.

Current guidelines recommend that adrenal tumors of diameter 1 cm or larger without apparent clinical indications of adrenal disease be assessed for possible malignancy and hormone secretion. Most of these tumors are found incidentally when patients have imaging studies for other reasons. As a result, existing studies report large variations in prevalence depending on patient selection. In contrast, this study measured the prevalence in individuals undergoing routine health examinations.

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Background:

With the widespread use of advanced imaging technology, adrenal tumors are increasingly being identified.

Objective:

To investigate the prevalence and characteristics of adrenal tumors in an unselected screening population in China.

Design:

Cross-sectional study. (ClinicalTrials.gov: NCT04682938)

Setting:

A health examination center in China.

Patients:

Adults having an annual checkup were invited to be screened for adrenal tumors by adrenal computed tomography.

Measurements:

The participants with adrenal tumors had further evaluation for malignancy risk and adrenal function.

Results:

A total of 25 356 participants were screened, 351 of whom were found to have adrenal tumors, for a prevalence of 1.4%. The prevalence increased with age, from 0.2% in participants aged 18 to 25 years to 3.2% in those older than 65 years. Among 351 participants with adrenal tumors, 337 were diagnosed with an adrenocortical adenoma, 14 with another benign nodule, and none with a malignant mass. In 212 participants with an adenoma who completed endocrine testing, 69.3% were diagnosed with a nonfunctioning adenoma, 18.9% with cortisol autonomy, 11.8% with primary aldosteronism, and none

with pheochromocytoma. Proportions of nonfunctioning adenomas were similarly high in various age groups (72.2%, 67.8%, and 72.2% in those aged <46, 46 to 65, and \geq 66 years, respectively).

Limitation:

Only 212 of 337 participants with an adrenocortical adenoma had endocrine testing.

Conclusion:

The prevalence of adrenal tumors in the general adult screening population is 1.4%, and most of these tumors are nonfunctioning regardless of patient age. Cortisol and aldosterone secretion are the main causes of functional adenomas.

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