我校李启富研究团队在国际著名期刊Journal of The American College of Cardiology发表重要研究成果

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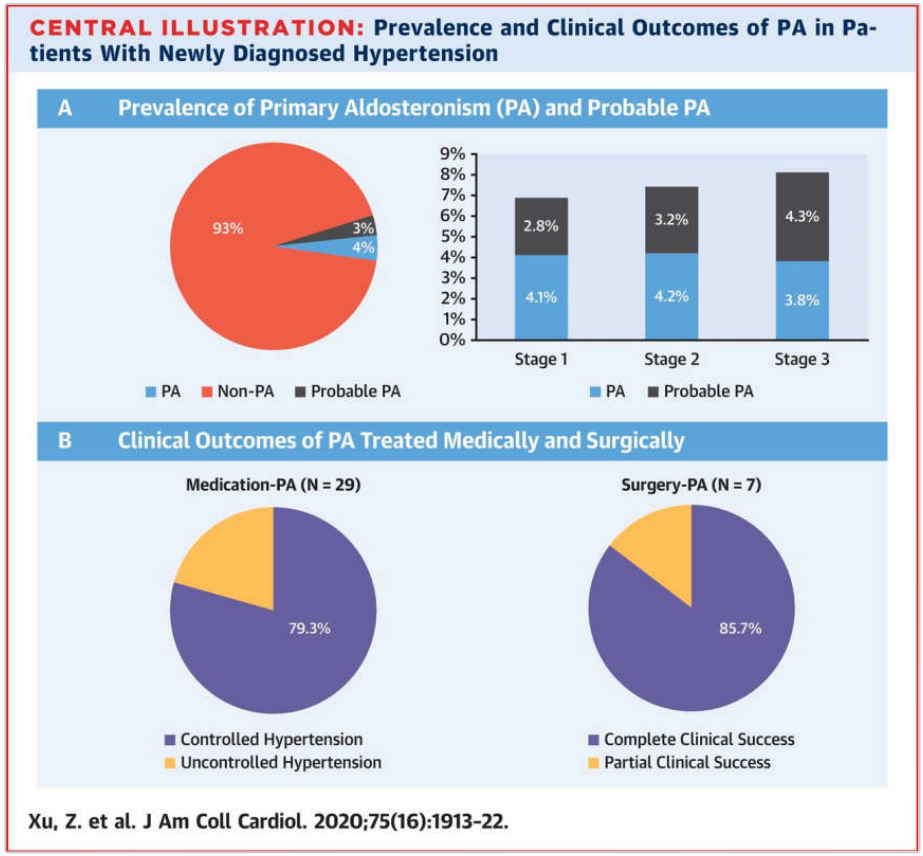
2020年4月20日，我校附属第一医院内分泌科李启富教授团队(重庆原醛症研究团队，CONPASS Group)在国际著名期刊Journal of The American College of Cardiology（JACC,IF=18.639）在线发表了题为“Primary Aldosteronism in Patients in China With Recently Detected

Hypertension”的论文。该研究首次报道了新诊断高血压患者中原发性醛固酮增多症（简称原醛症）的患病率、患病特征和治疗预后，为原醛症的诊治增加了新的证据。李启富、杨淑敏作为该论文通讯作者，徐智新、杨骏、胡金波博士等作为共同第一作者。

原发性醛固酮增多症是继发性高血压的常见病因，以肾上腺皮质自主高分泌醛固酮引起循环中醛固酮水平升高、肾素降低为主要特征。部分原醛症患者（醛固酮腺瘤）可通过单侧肾上腺切除术获得治愈，被认为是可治愈性高血压。

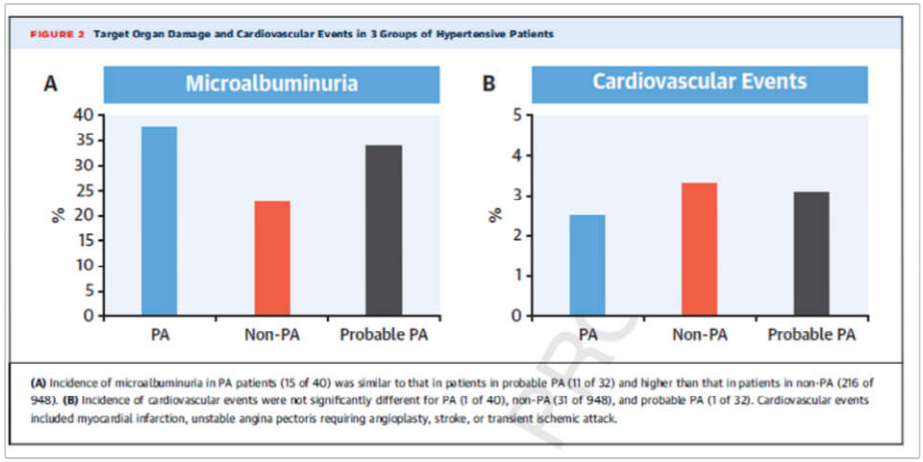
原醛症造成的长期高醛固酮血症会导致独立于血压的心脑血管事件风险增加和肾脏等靶器官损伤。早期诊断并纠正高醛固酮血症（手术或特定药物）带来的不良影响被认为可以改善患者预后。因此，原醛症的早筛查、早诊断尤为重要。

我国高血压疾病负担重，成人高血压患者接近3亿，按既往报道的高血压总人群中原醛症5%-10%的患病率估算我国至少有1千2百万原醛患者，然而在新诊断高血压中的原醛症患病率尚不清楚。因此，李启富教授领导的CONPASS团队就此问题开展了一项大样本前瞻性队列研究，历时1年半，纳入受试者1020人，最终明确了中国新诊断高血压中原醛症的患病率至少为4%（另外尚有3%为疑似原醛症患者）。各级新诊断的高血压之间，原醛症的患病率无显著差异（图1 A）。



（图1）

对三组高血压人群（原醛、非原醛、疑似原醛）的心血管事件和靶器官损伤的横断面分析发现，原醛和可疑原醛患者微量白蛋白尿（定义为尿微量白蛋白与尿肌酐浓度的比值≥30mg/gCr）的检出率显著高于非原醛患者，而三组人群的心血管事件无显著差异（图2）。对原醛患者接受治疗一年后的疗效评估分析发现，接受手术治疗组高血压治愈率高达85.7%；药物治疗组79.3%的患者仅需服用单一降压药（盐皮质激素受体拮抗剂，螺内酯）即可获得良好血压控制（图1 B）。



（图2）

该研究的重大意义在于：（1）发现在新诊断高血压中原醛症并不罕见（患病率为4%-7%）；（2）提示新诊断高血压患者应该进行积极的原醛症筛查，以期获得更好治疗效果。

该研究受到了美国内分泌协会主席、国际原醛症指南主席John W. Funder教授的高度认可，并同期对该研究撰写了述评（图3）。

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EDITORIAL COMMENT

Primary Aldosteronism in Newly Diagnosed Hypertensive Patients

Lessons From China*

John W. Funder, MD, PhD

The study by Xu et al. (1) in this issue of the *Journal* is remarkable in a number of ways. As one of the largest primary health care centers in South West China, the First Affiliated Hospital of Chong Quin Medical University does an annual health check on a population of 147,000 subjects. Over a period of 17 months (May 2017 to September 2018), they found 1,402 newly diagnosed hypertensive patients, 1,020 (73%) of whom they persuaded to take part in the study. Patients were followed up for 1 year post-surgery/medical treatment, and the results—and the implications thereof—are presented in an admirably written (and very rapid) communication.

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So far, so good: this was a prospective study on subjects who were shown not to be hypertensive last year, with a single center, with a very short time frame, and on an unprecedented scale. The work-up of these 1,020 patients was impeccable, in accordance with the 2016 U.S. Endocrine Society Guideline (2). Of the 1,020 patients, 93 screened potentially positive for primary aldosteronism (PA), with the majority (n = 73) consenting to a captopril challenge test (CCT) for confirmation/exclusion of PA. Those in whom the CCT was indeterminate were offered a 4-h, 2-l saline suppression test (SIT), which 12 declined. Of the 93 patients, 40 were classified as PA on CCT/SIT confirmatory testing, 21 were shown not to have PA on testing, and 32 were classified as "probable PA" (20 who declined CCT, and 12 who declined SIT after indeterminate CCT). The prevalence of PA was thus taken as 4% of newly diagnosed hypertensive patients, or 7% if the probable cases are included. Note that these are primary care, not referred, subjects.

The basis for potentially including the "probable" group ("possible" in the original paper) is based on their clinical and biochemical data being in many cases equivalent to that of patients with established PA; as the authors remark, if a few individual cases are not, some of the 20 patients who refused a captopril challenge may well have been. With 1 exception, bilateral hyperaldosteronism was predicated on the basis of the 15-point prediction score proposed by Kobayashi et al. (3).

From here on in, in terms of management, tatters emerge—through no fault of the authors, there was a high degree of unwillingness among the 40 diagnosed PA patients to undergo what is commonly considered useful further investigation. Only 4 of the 40 PA patients underwent adrenal vein sampling: 3 were shown to have unilateral disease, and 1 bilateral. In total, 5 PA patients (younger than age 35 years, with spontaneous hypokalemia, markedly elevated plasma aldosterone concentration [PAC], and cortical adenoma on computed tomography [CT]) were included in the dwindling cohort (8 of 40) of patients presenting for surgery. Among the remaining 31 patients, 6 refused any further investigation (including CT) and 25 underwent CT, with 2 having unilateral nodules: all were unwilling to have surgery, and therefore, very appropriately, adrenal vein sampling was not recommended.

Muddy waters, indeed, but to the authors' credit they are able to make a series of useful and often—given the <1 year of hypertension—novel

*Editorials published in the *Journal of the American College of Cardiology* reflect the views of the authors and do not necessarily represent the views of *JACC* or the American College of Cardiology.

From the Hudson Institute of Medical Research, and Monash University, Clayton, Victoria, Australia. Dr. Funder has reported that he has no relationships relevant to the contents of this paper to disclose.

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（图3）

述评中Funder教授从以下几方面谈及了该研究的意义：（1）研究筛查规模空前，纳入人群具有代表性，诊断流程严格遵循国际指南，完成质量高；（2）研究结果对初级诊疗中心开展原醛症筛查具有启示作用：新诊断高血压开始药物治疗之前应进行原醛症筛查；（3）通过对原醛症患者治疗后跟踪随访，证实了早期开展原醛症筛查的高血压患者预后更好。

文章链接：http://www.onlinejacc.org/content/75/16/1913?from=groupmessage&isappinstalled=0

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