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封面文章

香烟烟雾含有尼古丁以及一氧化碳和多环芳烃等有毒物质, 现有研究证实吸烟可以直接损害肺动脉微结构, 引起肺血管微结构重构, 而肺循环与左心房(left atrial, LA)直接沟通, 肺循环的重构与变化会间接影响到 LA 的结构与功能改变。心脏磁共振(cardiac magnetic resonance, CMR)是评估心脏结构和功能的“金标准”, LA 心肌应变(myocardial strain, MS)是指 LA 的变形能力, 其参数能够反映 LA 结构的改变、心肌纤维化以及 LA 的僵硬程度。而目前探索吸烟对 LA MS 影响的研究却鲜有报道。由此作者提出: 在男性正常健康志愿者中, 吸烟组志愿者与非吸烟组志愿者比较, 基于 CMR 成像的 LA 结构、功能及 MS 会发生什么变化呢? 在吸烟组志愿者中, 不同吸烟严重程度对 LA 结构、功能及 MS 还会有什么影响呢?

该研究首次利用 CMR 技术在男性正常健康志愿者中进行了吸烟相关 LA MS 的分析, 纳入行 3.0 T MR 心脏常规成像检查的男性正常志愿者共 70 例, 分为吸烟组与非吸烟组, 吸烟定义为每天吸烟 ≥ 5 支且至少三年从未戒烟。采用 Medis Suite 软件测量获取 LA 结构、功能及 MS 参数(MS 参数包括整体纵向应变、整体径向应变、整体圆周应变等)。

研究结果显示吸烟组与非吸烟组之间 LA MS 参数有所改变, 究竟是什么呢? 该研究正在进行下一步的深入探索, 详见内文第 21~25 页。

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About the cover

Cigarette smoke contains toxic substances such as nicotine, carbon monoxide, and polycyclic aromatic hydrocarbons. Existing studies have confirmed that smoking can directly damage pulmonary artery microstructure and cause pulmonary vascular remodeling. Since the pulmonary circulation communicates directly with the left atrial (LA), the remodeling and changes of the pulmonary circulation will indirectly affect the structural and functional of LA. Cardiac magnetic resonance (CMR) is the gold standard for evaluating cardiac structure and function. LA myocardial strain (MS) refers to the deformability of LA, and its parameters can reflect the structural changes of the left atrium, myocardial fibrosis, and the degree of stiffness of LA. However, few studies have explored the effects of smoking on LA MS. This led us to ask: what happens to structure, function and MS of LA based on CMR imaging in normal healthy male volunteers in the smoker group compared to those in the non-smoker group? What are the effects of different smoking severity on the structure, function, and MS of LA among smokers?

This is the first study to use CMR to analyze smoking-related LA MS in normal male healthy volunteers. A total of 70 volunteers underwent on a 3.0 T MR instrument were divided into the smoker group and non-smoker group. Smoker was defined as smoking more than 5 cigarettes a day and never quitting for at least three years. LA structure, function, and MS parameters were measured by Medis Suite software. MS parameters included global longitudinal strain (GLS), global radial strain (GRS), and global circumferential strain (GCS), etc.

The study showed changes in LA MS parameters between the smoking and non-smoking groups—what were they? This research will be going on in the near future. See text page 21-25.