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REPLY: Homocysteine and Thrombophilia in Pulmonary Hypertension

We thank Dr Spence for his interest in our study of congenital thrombophilia in patients with chronic thromboembolic pulmonary hypertension (CTEPH).[1] The study is a continuation of our research of congenital thrombophilia in patients with pulmonary embolism (PE),[2] in which we found that the prevalence of congenital thrombophilia in Chinese patients with PE is 7.2%, with a predominance of anticoagulant protein deficiency. We are therefore interested in the prevalence of thrombophilia in CTEPH, which is considered a rare sequela of PE.

As Dr Spence mentioned in his letter, hyperhomocysteinemia is much more common in Chinese patients with venous thromboembolism (VTE). Zhang[3] showed that the prevalence of hyperhomocysteinemia in Chinese patients with PE was 34.57%, significantly higher than that in healthy control subjects (10%; $P < 0.001$). Hyperhomocysteinemia increased the risk of PE (OR: 5.146; 95% CI: 1.945-13.617; $P = 0.001$). A study by Lu et al[4] similarly showed that total plasma homocysteine levels were significantly higher in patients with PE than in healthy control subjects (16.6 ± 1.8 μmol/L vs 12.5 ± 1.5 μmol/L; $P < 0.01$), and hyperhomocysteinemia was an independent risk factor for PE in the Chinese population. Wang et al[5] studied the genotype distribution of MTHFR C667T in Chinese patients with VTE, and the distribution of T/T, C/T, and C/C genotypes in the VTE group was 29.3%, 48.3%, and 22.4%, respectively.

We are very concerned about the impact of VTE risk factors in patients with CTEPH. The prevalence and clinical characteristics of antiphospholipid antibody syndrome[6] and congenital thrombophilia[1] in Chinese patients with CTEPH have been reported. Additional issues for investigation, as noted by Professor Spence, are the prevalence of hyperhomocysteinemia and polymorphisms of genes that predispose to hyperhomocysteinemia in patients with CTEPH. We plan to publish the epidemiologic and genetic data of hyperhomocysteinemia, as well as the interaction model for multiple VTE risk factors in CTEPH patients, in future research.

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The authors attest they are in compliance with human studies committees and animal welfare regulations of the authors' institutions and Food and Drug Administration guidelines, including patient consent where appropriate. For more information, visit the Author Center.

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