

# A new light on an old condition

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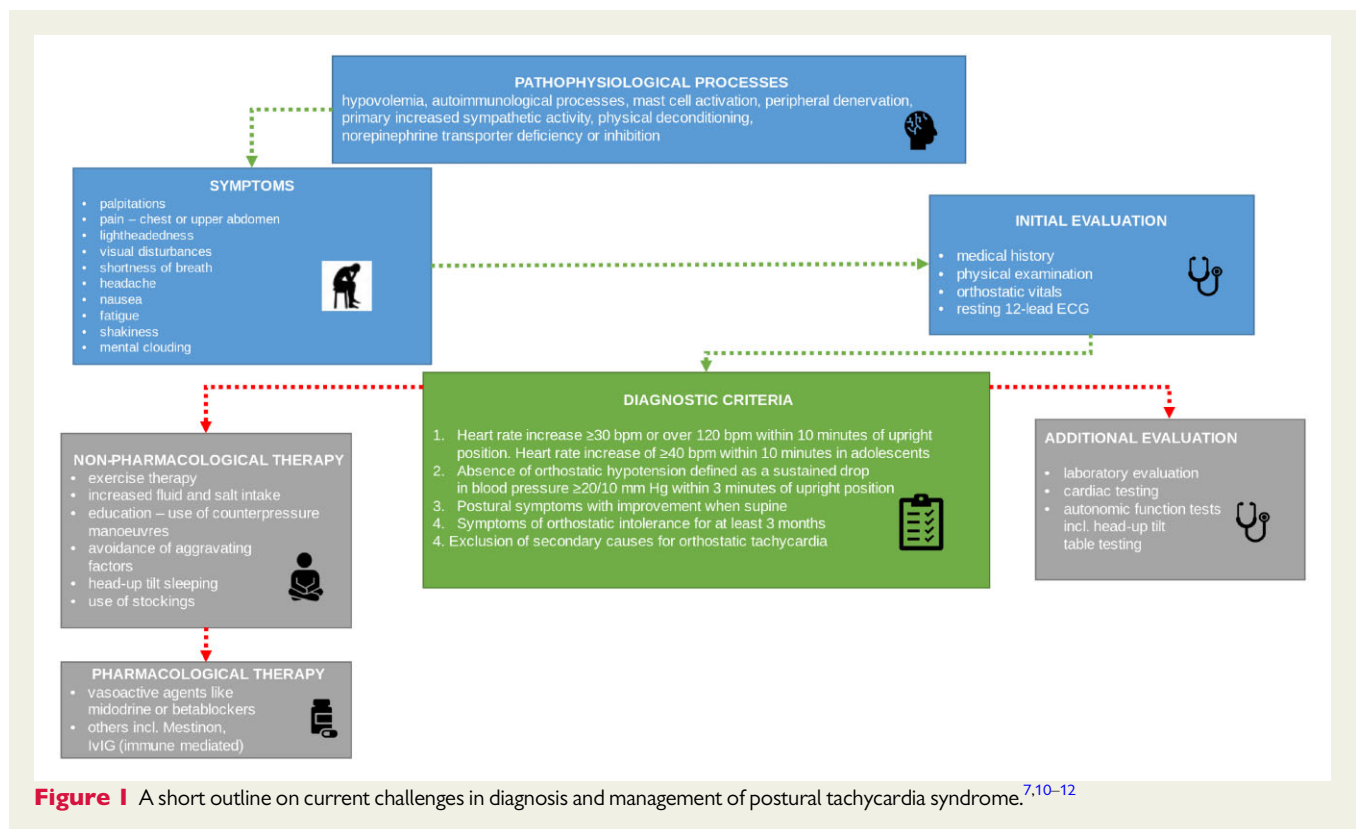
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This edition of EHJ presents post-coronavirus disease (COVID)-19 cases of postural tachycardia syndrome (POTS). Since its framing by Schondorf and Low (1993), the term has enabled a structured development of both patients’ experiences and scientific results. Clear

standards and distinct recommendations for diagnosis<sup>1,2</sup> have facilitated the quest for desperately needed management recommendations. While the term has only been used for about 30 years, the history of POTS may be extended to the first description of a similar condition in 1871 by Da Costa. Lacking a uniform terminology in the intervening century, the condition was known variously as Irritable Heart Syndrome, Da Costa Syndrome, or Soldier’s Heart in English and a variety of others in German.



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Many patients with POTS report an initial infection<sup>3</sup> with immune events ranging from respiratory, gastrointestinal to skin infections. Most likely these triggers (i) do not represent a direct cause of POTS and (ii) activate a complex immune system response.<sup>4</sup> A possible interaction between the cardiovascular autonomic nervous system and the immune system is likely of cybernetic nature—one example is an inverse correlation of interleukin-6 serum levels to heart rate variability.<sup>5</sup> Hence, occurrence of autonomic nervous system dysfunction after severe acute respiratory syndrome coronavirus 2 is not surprising. Early in the pandemic, clinicians observed that some ‘long COVID-19’ patients experienced symptoms that were characteristic of POTS<sup>6</sup> (Figure 1) and increasingly, POTS is getting the attention that it has deserved for decades. POTS may potentially be of debilitating course, predominantly affecting younger, female individuals. Some patients remain severely affected after several years<sup>7</sup> and in our two decade—long experience, the disease results in dramatically reduced quality of life, social isolation, and job loss. Management strategies focus primarily on the modest interventions, such as non-pharmacological treatment, vasoactive substances, and intravenous Immunglobulines (IVIGs). The natural course of this syndrome is still unclear, especially since POTS may be caused by heterogeneous diseases<sup>7</sup> and may also overlap with conditions such as chronic fatigue syndrome.<sup>8</sup> Several ‘subtypes’ of POTS have been described, based primarily on structured cardiovascular autonomic testing. While characterization of POTS subtypes may affect its management, a generic diagnosis of POTS is incomplete and often serves as the starting point of a complex diagnostic evaluation.

W.H. Parker’s<sup>9</sup> article describes seven active patients with female predominance who suffer a wide variety of symptoms on presentation including dyspnoea, lightheadedness, dizziness, chest discomfort, and anxiety.<sup>10</sup> This article highlights an urgent need for more focused research on POTS to improve our understanding of the complex autonomic and immune system interactions underlying this disease,

as well as to recommend novel individual patient-centred management plans for this mysterious syndrome.

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