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Oncohypertension; treatment of high blood pressure in cancer patients

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Implication for health policy/practice/research/medical education:
Oncohypertension addressed the connection between cancer and hypertension.
High blood pressure is a common comorbidity in cancer patients. Similarly, several anti-cancer drugs can exacerbate the new onset of hypertension or aggravate pre-existing high blood pressure by several mechanisms. Therefore, the connection between hypertension and cardiovascular mortality, morbidity, and renal function requires further investigation. The oncohypertension serve as a new entity among oncologist, nephrologist, and cardiologist.
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Owing to elderly people, the frequency of high blood pressure has been growing throughout the world (1). Hypertension is a global problem. Several investigations indicate that the prevalence of high blood pressure has raised in recent decades because of the elderly population (2). High blood pressure is a principal risk factor for heart disease too and is a major cause of mortality, responsible for 7.6 million deaths per annum globally (3). Cancer is also one of the crucial causes of worldwide mortality (4). Malignant tumors are accompanied by enhanced morbidity, and a substantial financial burden (5). While the morbidity and mortality due to malignancy have also been growing in elderly populaces (1); however, following the rise of newer chemotherapeutic compounds, like immunotherapy or targeted therapies, the survival and prognosis of cancer patients have substantially amended. Consequently, cancer patients are living longer and therefore undergoing cardiovascular problems (4). Meanwhile, high blood pressure is the furthermost comorbidity in cancer individuals. Subsequently, several cancer cases are administered antihypertensive agents before malignancy diagnosis or throughout the cancer therapy (6). On the other hand, it has been indicated that high blood pressure may increase the risk of cancer. Nevertheless, may the antihypertensive therapy influence the occurrence, treatment efficiency, or prognosis of cancer remains ill-understood (6). Hypertension in cancer patients is still underestimated (7). Previous studies demonstrated that hypertension was linked to a greater risk of malignancy (8). While high blood pressure is a parameter in the emergence of malignancy, some reports revealed the remission of high blood pressure following gastrectomy (9). All of these findings and confrontations lead to a new entity in the three fields of oncology, cardiology, and nephrology, entitled oncohypertension. This term addressed the connection between cancer and hypertension (1). Oncohypertension describes the potential association between high blood

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pressure and cancer. Current studies have reminded us that high blood pressure is associated with a higher risk of colon cancer, esophageal squamous cell carcinoma, head and neck cancers, renal cell carcinoma, breast cancer, and uterine adenocarcinoma (1). Likewise, some antineoplastic agents cause new or deteriorating hypertension. It is also possible that the administration of non-neoplastic agents such as steroids or erythropoietin, becomes a challenge in managing high blood pressure in cancer patients due to noncompliance and multiple drug interactions (7). Accordingly, untreated hypertension prior to and through cancer treatment possibly raises the short-term and long-term possibility of cardiotoxicity, for example, heart failure involved in both cardiovascular and cancer mortality (7). A nephrology point of view also mentions the risk factors of excessive sodium intake, low physical activity, obesity, and diabetes which may affect both high blood pressure and malignancies (10). In summary, high blood pressure is a common comorbidity in cancer patients. Similarly, several anti-cancer drugs can exacerbate the new onset of hypertension or aggravate pre-existing high blood pressure by several mechanisms (11). Hence, the connection between hypertension and cardiovascular mortality, morbidity, and renal function requires further investigation. The oncohypertension serve as a new entity among oncologist, nephrologist, and cardiologist.

Authors' contribution

Conceptualization: Leila ALem, Parisa Kaviani.
Data curation: Leila ALem, Parisa Kaviani.
Investigation: Leila ALem, Parisa Kaviani.
Resources: Leila ALem, Parisa Kaviani
Supervision: Leila ALem.
Validation: Leila ALem, Parisa Kaviani.
Visualization: Leila Alem.
Writing–original draft: Leila Alem.
Writing–review and editing: Mohammad Ali Esmaeil pour, Azadeh Khayyat, Parisa Kaviani, Mehrnoosh Ebadi, Oscar Felipe Borja Montes.

Conflicts of interest

The authors declare that they have no competing interests.

Ethical issues

Ethical issues (including plagiarism, data fabrication, and double publication) have been completely observed by the authors.

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