A case of hepatotoxicity by Pelargonium sidoides
Cardiotoxicity caused by chemotherapy, not only anthracyclines

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Cancer is a complex disease which needs every available 'weapon' to defeat it. Chemotherapy and radiotherapy are very valuable techniques in this fight, but often they are also harmful for the body to such an extent that they can themselves cause irreversible damages. Heart disease induced by anticancer drugs is among these. Until recently, cardiotoxicity was considered related only to the use of anthracyclines (particularly adriamycin). In recent years, however, we have seen that almost all drugs used in chemotherapy, inhibitors of topo-isomerase, antimetabolites, alkylating agents and even monoclonal antibodies can cause serious and irreversible heart damage. Only in a few cases do we know the mechanism behind the toxicity. Only for a few drugs can we establish a relationship between cumulative dose, administration schedule and incidence of adverse cardiac events. In this scenario, it is important to recognize the leading role played by a cardiologist in the choice of remedies. Natural substances, especially phytotherapeutic elements, may be effective in treating and preventing damage induced by anticancer drugs, for example Resveratrol. These substances are thought to act on the cardiomyocytes, stabilise mitochondrial function, reduce reactive oxygen species (ROS) or have anti-inflammatory action through the inhibition of nuclear factor kappa B (NF-kB). Other supplements/drugs, of which the mechanisms are known, may be used. It may be worth considering that the practice of oncology can be complemented by other medical approaches. This integrative oncology can help to improve the quality of life for patients, reduce the irreversible damage and improve psychophysical wellbeing, important in a disease so critical and complex.
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A case of hepatotoxicity by Pelargonium sidoides

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Pelargonium sidoides (PS) is an African herbaceous, perennial plant in the geranium family. The root is the part used medicinally for respiratory problems. Its pharmacological activities include moderate direct antibacterial and antiviral potencies and immunomodulatory capabilities. An alcohol extract made from PS has become popular in Germany as a treatment for colds and immunomodulatory capabilities. An alcohol extract made from PS has become popular in Germany as a treatment for colds and respiratory problems. Its pharmacological activity is connected to a force transducer in the absence versus presence of whole extracts from hawthorn, green tea and standards of catechin and quercetin.

Results: Contraction (cN) was 2.73 ± 0.33 compared to 3.63 ± 0.38 (p=0.0015) for Crataegus 200 µg ml⁻¹ and 3.15 ± 0.5 compared to 3.93 ± 0.68 (p=0.04) for Crataegus 100 µg ml⁻¹, while for quercitin 200 µg ml⁻¹ and 100 µg ml⁻¹ it was not significant (NS). For green tea 200 µg ml⁻¹ cN was 2.85 ± 0.63 compared to 3.84 ± 0.79 (p=0.03), while for green tea 100 µg ml⁻¹ and catechin 200 µg ml⁻¹ and 100 µg ml⁻¹ it was NS. Endothelial-dependent relaxation to cumulative doses of acetylcholine 10⁻⁹ to 10⁻⁴ M expressed in Hill constants was maximal for Crataegus 100 µg ml⁻¹ and 100 µg ml⁻¹ cN was 2.85 ± 0.63 compared to 3.84 ± 0.79 (p=0.03), while for green tea 100 µg ml⁻¹ and catechin 200 µg ml⁻¹ and 100 µg ml⁻¹ it was NS. Endothelial-dependent relaxation to cumulative doses of acetylcholine 10⁻⁹ to 10⁻⁴ M expressed in Hill parameters was maximal for Crataegus 200 µg ml⁻¹: relaxation 18 ± 3.89%, compared to 5.16 ± 1.16%, EC50 (-Log[M]) 7.6 ± 0.17 compared to 7.4 ± 0.19 and Hill slope 0.68 ± 0.17 compared to 1.36 ± 0.5 (p<0.0001).

Conclusion: The study proved that whole extracts of hawthorn and green tea induced a more potent effect on contractile response and on endothelial-dependent relaxation of human IMA rings than the responses to the standards of main polyphenols in each of them. We emphasise that the synergistic interaction of polyphenols is essential for this response.

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Comparison of the effects of green tea and hawthorn extracts on endothelial function in isolated human mammary arteries

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Background and Aim: This study was designed to determine the vasodilatory response of human internal mammary arteries (IMAs) to different concentrations of hawthorn (Crataegus monogyna) and green tea (Camellia sinensis) extracts and to compare it to the standard of the polyphenol present in the highest concentration in each extract as determined by high-performance liquid chromatography (HPLC).

Methods: Segments of IMA were harvested intra-operatively from 10 selected male patients undergoing coronary artery bypass grafting (CABG) (age range 48–68 years). The segments of IMA were cut into rings of 4 mm. The rings were suspended in 10-ml organ-bath chambers containing Krebs–Henseleit solution connected to a force transducer in the absence versus presence of whole extracts from hawthorn, green tea and standards of catechin and quercetin.

Results: Contraction (cN) was 2.73 ± 0.33 compared to 3.63 ± 0.38 (p=0.0015) for Crataegus 200 µg ml⁻¹ and 3.15 ± 0.5 compared to 3.93 ± 0.68 (p=0.04) for Crataegus 100 µg ml⁻¹, while for quercitin 200 µg ml⁻¹ and 100 µg ml⁻¹ it was not significant (NS). For green tea 200 µg ml⁻¹ cN was 2.85 ± 0.63 compared to 3.84 ± 0.79 (p=0.03), while for green tea 100 µg ml⁻¹ and catechin 200 µg ml⁻¹ and 100 µg ml⁻¹ it was NS. Endothelial-dependent relaxation to cumulative doses of acetylcholine 10⁻⁹ to 10⁻⁴ M expressed in Hill parameters was maximal for Crataegus 200 µg ml⁻¹: maximum relax 18 ± 3.89%, compared to 5.16 ± 1.16%, EC50 (-Log[M]) 7.6 ± 0.17 compared to 7.4 ± 0.19 and Hill slope 0.68 ± 0.17 compared to 1.36 ± 0.5 (p<0.0001).

Conclusion: The study proved that whole extracts of hawthorn and green tea induced a more potent effect on contractile response and on endothelial-dependent relaxation of human IMA rings than the responses to the standards of main polyphenols in each of them. We emphasise that the synergistic interaction of polyphenols is essential for this response.

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