

Magnetic water and clinical cancer chemotherapy

Abstract

Cancer is a high mortality human disease. Chemotherapy suits for most part of cancer patients. However, chemotherapy is generally high toxic that makes drug dose-control a difficult thing. It was discovered that magnetic water, field and nanoparticles could reduce the drug toxicities in animal studies. To promote cancer treatment by chemotherapy, therapeutic innovation (magnetic related technology) is indispensable. In search for related mechanisms, biomedical knowledge and tradition should be advanced. New investigations should be undertaken for chemotherapy practice in the clinic.

Keywords: Chemotherapy, magnetic water treatment, cancer research, experimental stud

Volume 11 Issue 2 - 2025

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Received: April 8, 2025 | **Published:** April 8, 2025

Introduction

Disease characters

Cancer is a high-mortality disease (approximately 1/3 death for all cancer patients in developed countries and >50% patient's death in developing countries). Chemotherapy suits for most part of cancer patients.¹⁻⁶ Nonetheless, chemotherapy is high toxic that makes drug dose-control a difficult thing.

Magnetic water and field discovery

It was discovered that magnetic water, field and nanoparticles could reduce the drug toxicities in animal studies.⁷⁻¹³ To promote cancer treatment by chemotherapy, therapeutic innovation (magnetic related technology) is indispensable.

Clinical situations

Dilemma of chemotherapy

Cancer chemotherapies do not show 100% benefits due to high drug toxicity to normal cells and organs. Thus, it cannot kill all cancer cells in cancer patients by low or moderate drug doses in the clinic. Variant ways of medical options can alleviate drug toxicity in initiative studies.

Reducing drug toxicity by magnetic water

Magnetic water or fields in cancer treatment is an interesting discovery in pharmacological studies. Magnetic water (MW) can increase mice survivals after administrating lethal anticancer drug doses.⁹ Reported in the animal studies provide possibility of its clinical applications.^{9,10}

Mechanisms and hypothesis for MW

Magnetic water or fields might change drug distribution and excretion in living bodies.⁷⁻¹⁰ It has different mechanisms. Table More pathways should be found and applied in the clinic.

Table Relation between magnetic water and drug toxicity reduction

Hypotheses	Pathways & mechanisms	References
Drug distributions	Retention in normal & malignant cells	7
Kidney drug clearance	Drug elimination changes	8
Body function	Increase of body survivals	9
Cancer progress	Variant activity to different tumors	10
Reactive-oxidative stress	Inorganic complex in cells and tumors	8, 12

Future trends

Therapeutic widening

The mechanisms of drug clearance by MW is a mystery now. It depends on the progress of oncological and pharmacological knowledge. New knowledge should be found.¹⁴

Applications in other fields

Besides discoveries in medicine, MW activities in other fields, like in agriculture is also useful.^{15,16} Facing with this situation, we should try to understand their mechanisms and technology in various forms. This is very important for promoting utility and achievements of MW in medical sciences.

Conclusion

MW might have useful utilities in cancer treatments. Scientific and technical progress should be constantly follow-up. New techniques and methods will be streamlined.

Acknowledgement

None.

Conflicts of interest

None.

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