Fighting cancer without harming healthy cells â€“ experimental research

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Published Date: 07-25-2019

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Several studies in the last couple of years have shown that sometimes a drug that acts as a biological toxin or toxic drug is effective at killing cancer cells, when given to mice or cancer cells in the lab. This problem has been underreported, but today Cancer Research UK released a series of studies showing that being able to kill cancer cells without harming healthy cells is an important step towards developing drugs to kill cancer cells.

The work was conducted at Cancer Research UKâ€™s Barts and The London School of Medicine and Dentistry in collaboration with other groups. The studies were done using the Cancer Research UK Spirinel system â€“ a handheld fluorescent imaging tool that can be attached to cancer cells to look for a fluorescent marker. The tests were carried out on mammary tumours, melanoma skin cancers, ovarian and liver cancers in mice, and human colon and lung cancer cells.

Dr Sue Harrison, who led the work on the breast cancer test and previously worked at Cancer Research UK, said: â€œBy using the Spirinel system to see cancer cells before the animal has died, we can tell whether a particular toxic drug will kill cancer cells as well as non-cancer cells. These experiments are very important because we can tell which treatment will be effective at killing cancer cells â€“ and healthy cells â€“ without removing them from the tumour in the lab. This could be the first step towards developing new types of cancer drugs that are toxic but wonâ€™t damage healthy cells in the body.â€

Cancer Research UK experts working on using the Spirinel system for cancer research are now carrying out similar tests with test tumours on humans, using a treatment called PLX4032 which kills cancer cells but keeps healthy cells intact.

Dr Karim Nayar, Cancer Research UKâ€™s senior science information manager, said: â€œThese results show that being able to identify and kill cancer cells in the laboratory can be an important step towards new ways of treating cancer.

â€œThe future success of this type of study will depend on strong collaboration between researchers around the world. Working together we can really move forward in developing drugs that will kill cancer cells while leaving healthy cells intact.â€

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A Black And White Photo Of A Fire Hydrant