

Bone drug zoledronic acid may help prevent spread of early lung cancer

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A drug that is currently used to help treat bone metastases in patients with lung cancer could also be useful at an earlier stage of treatment, to prevent the cancer from spreading in the first place, Italian researchers have found.

Dr Michela Quirino and colleagues from the Catholic University of the Sacred Heart in Rome have reported important new evidence that zoledronic acid may be able to prevent [lung cancer](#) metastases from recruiting the new blood vessels they need to survive. This process of recruiting new blood vessels is called angiogenesis.

"Our investigation represents the first clear clinical evidence of the anti-angiogenic effect of zoledronic acid in patients with metastatic lung cancer," Dr Quirino said. "It also represents the first biological basis in lung cancer for the clinical investigation of zoledronic acid not only for metastatic lung cancer, but also in early disease."

Dr Quirino presented findings from a study of 41 patients with advanced lung cancer.

Each patient was administered 4 mg of zoledronic acid, and their blood levels of several molecular markers of angiogenesis were measured before and 48 hours after the injection. Those markers included the molecules VEGF, PDGF, b-FGF and HGF.

"We found a statistically significant reduction of VEGF levels at day 2

after 4 mg ZA intravenous infusion compared with basal values," Dr Quirino said. Blood levels of bFGF were also significantly reduced. "Some studies reported that VEGF secretion is induced by bFGF and this could support our results," she added.

The researchers did not record any significant effect of injecting the drug on the levels of the other two mediators of angiogenesis, PDGF and HGF.

Treatment with zoledronic acid is already an important treatment to manage [bone metastases](#) from lung cancer, Dr Quirino noted. Some clinical studies have already demonstrated that zoledronic acid in bone metastases from lung cancer improves [clinical outcomes](#) and patient survival.

"If further studies should confirm a possible anti-metastatic effect of this drug, possibly relying also on its anti-angiogenic effect, it could be introduced in the early management of the disease, even as an adjuvant therapy."

Commenting on the study, which he was not involved in, Prof Ken O'Byrne, from St James's Hospital in Dublin, Ireland, said: "These observations underline the importance of targeting VEGF in non-small cell lung cancer and the potential role bFGF may have in tumor growth and metastasis. The results lay the groundwork for evaluating the potential role of [zoledronic acid](#) in the treatment of lung cancer independently of the effects on bone [metastases](#)."

Provided by European Society for Medical Oncology

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