Gefitinib improves survival compared with standard chemotherapy in lung cancer patients with genetic mutation

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Patients with the most common form of lung cancer (non-small-cell lung cancer) who have mutations in the epidermal growth factor receptor (EGFR) gene have significantly improved progression-free survival if they are treated with gefitinib compared with standard chemotherapy. Wherever possible, EGFR genetic testing must be done and gefitinib should be considered as the first-line treatment for patients with EGRF mutations, concludes an Article published Online First in *The Lancet Oncology*.

Non-small-cell lung cancer (NSCLC) accounts for about 85% of lung cancer cases, and remains the leading cause of cancer death worldwide. Recently, targeted drugs have been developed that can improve survival in specific groups of patients with NSCLC.

For example, gefitinib has been shown to have considerable benefit in patients with NSCLC who are more likely to have EGFR mutations, such as those of Asian origin, women, and those who have never smoked. Recent trials of gefitinib monotherapy have failed to show any survival advantage in unselected patient populations. It has been suggested that this lack of survival advantage might be due to a lack of patient selection.

To resolve this uncertainty, Tetsuya Mitsudomi and colleagues from West Japan Oncology Group compared gefitinib with a standard chemotherapy regimen (cisplatin plus docetaxel) in patients with NSCLC selected according to EGRF mutation status. 177 patients with EGFR mutations were recruited from 36 centres in Japan and randomly assigned to receive either gefitinib (88) or cisplatin plus docetaxel (89) every 21 days for 3 to 6 cycles. Disease progression was regularly assessed using CT and MRI.

Overall, patients in the gefitinib group had significantly longer progression-free survival (9.2 months) compared with the chemotherapy group (6.3 months).

In addition, findings showed that the objective response rate* was significantly higher in the gefitinib group (62.1%) than in the cisplatin plus docetaxel group (32.2%). The disease control rate was also higher in the gefitinib group (93.1%) than in the chemotherapy group (78%).

Gefitinib was also generally better tolerated than cisplatin plus docetaxel, and adverse events of grade 3 or more were infrequent and included skin rash, liver dysfunction, and diarrhoea. By contrast, the most common adverse events in the chemotherapy group occurred in more than half of patients and included nausea, myelosuppression, fatigue, and alopecia.

The authors say: "Our study indicates that EGFR genetic testing is feasible and should be done when possible…Considering the efficacy and toxicity of gefitinib, it is a reasonable option for the first-line treatment of patients with activating EGFR mutations."

They conclude: "These results strongly suggest that the presence of EGFR mutations, and not the clinical background of patients, determines clinical efficacy, and this knowledge should lead to molecularly based, personalised treatment of lung cancer in the near future."

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