

and 5-year disease-free survival rates for patients receiving chemotherapy plus PSK were 79.0% and 72.2%, respectively, compared with 72.2% and 65.9%, respectively in the chemotherapy alone group. In the combined analysis, the death rate for patients receiving PSK was reduced by 29% ($P=0.006$) and the recurrence rate by 28% ($P=0.003$) compared with chemotherapy alone.

The authors are currently conducting a meta-analysis of individual patient data, which is anticipated to provide greater insight into the effects of PSK immunochemotherapy.

Original article Sakamoto J *et al.* (2006) Efficacy of adjuvant immunochemotherapy with polysaccharide K for patients with curatively resected colorectal cancer: a meta-analysis of centrally randomized controlled clinical trials. *Cancer Immunol Immunother* 55: 404–411

How can we avoid the prescription of contraindicated drugs?

Adverse events caused by prescribing drugs in violation of a 'black box' warning are thankfully rare—occurring in <1% of those who receive a contraindicated drug, according to results of an observational study of records from 51 outpatient practices in the greater Boston area. Despite this encouraging finding, the number

of patients at risk is large; and adverse drug events are thought to cause ~100,000 deaths annually in the US alone.

Lasser *et al.* report that 10% of adult outpatients given prescription medication received a drug bearing a black box warning; warning violations occurred in 7% of cases (2,354 of 33,778 patients). Seven drugs accounted for almost three-quarters of violations. The authors reviewed a randomly selected sample of 575 medical records, and identified 92 cases in which the warning violation could have resulted in an adverse effect, and four cases in which an adverse event actually occurred. All four were deemed preventable.

Clinical practice guidelines often contain different information to black box warnings, say the authors, and the latter can be vague and difficult to interpret. Compliance could be improved by devising a searchable online database of consistent, clear and simple warnings. With the increasing use of electronic health records, say Lasser *et al.*, the potential of online alerts to support prescribing decisions, especially for drugs with the most commonly violated warnings, or those with the greatest potential to cause harm, should be explored.

Original article Lasser KE *et al.* (2006) Adherence to black box warnings for prescription medications in outpatients. *Arch Intern Med* 166: 338–344