

RGH Pharmacy E-Bulletin

Volume 35 (11): October 5, 2009

A joint initiative of the Patient Services Section and the Drug and Therapeutics Information Service of the Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia. The RGH Pharmacy E-Bulletin is distributed in electronic format on a weekly basis, and aims to present concise, factual information on issues of current interest in therapeutics, drug safety and cost-effective use of medications.

Editor: Assoc. Prof. Chris Alderman, University of South Australia – Director of Pharmacy, RGH

© Pharmacy Department, Repatriation General Hospital, Daw Park, South Australia 5041

Insulin glargine and associated cancer risk

A long acting insulin analogue might be considered for diabetic patients who suffer significant hypoglycaemia, whether or not they achieve their target HbA1c. It may be useful for those who cannot use the device needed to inject NPA insulin, or who need a carer to administer injections and for whom switching to a longer acting insulin analogue reduces the number of daily injections.

It has been proposed that insulin might act as a tumour growth factor, and that alteration to the insulin molecule may increase its trophic effects. In-vitro research has shown that breast, colon and pancreatic tumours may be insulin-responsive.

Three out of four observational studies published in *Diabetologia* suggested an increased risk of cancer with the use of the long acting insulin analogue, glargine. The German and Scottish studies suggested an increased risk of cancer overall in treated with glargine as their sole insulin. The strongest link in the German study was with breast cancer amongst older people. There was a higher risk associated with higher doses of all types of insulin but the risk appeared greater with glargine than with human insulin. In the Swedish and Scottish studies there was an increased risk of breast cancer, specifically amongst those on glargine monotherapy, when compared to those on other insulins. There was no increased risk in those on glargine in combination with other insulins. The overall incidence of all cancers and breast cancer specifically was not significantly different in the population on glargine versus those not on glargine. A UK study showed no difference in the risk of cancer for glargine alone compared to human insulin alone.

The four studies described were observational studies, not randomized controlled trials. They were of short duration (a few years) and the numbers were too small to be conclusive about the link between glargine and breast cancer. Although there was some adjustment for confounding factors such as age and smoking, most known risk factors for breast cancer were not accounted for in most of the analyses. These include age at menopause, parity, exogenous hormone use, genetic predisposition or family history of cancer, body mass index, and socio-economic class.

The European Medicines Agency (EMA), FDA and Australian Diabetes Society agree that the relationship between insulin glargine use and risk of developing cancer cannot be confirmed nor excluded. None of these agencies are advising a change in practice. Patients should not stop taking insulin glargine as there are immediate and long-term serious adverse effects. Prescribers may wish to review their use of insulin glargine in the light of their own particular circumstances. Patients with a known current cancer or those with a family history of breast cancer it is reasonable to consider changing to other insulins from insulin glargine.

In the meantime further study is awaited. One example is the Outcome Reduction with Initial Glargine Intervention (ORIGIN) study, a large ongoing randomized controlled trial which may provide more evidence.

Acknowledgment – This E-Bulletin is based on work by Nicky Gordon, Senior Clinical Pharmacist, RGH.

FOR FURTHER INFORMATION CONTACT THE PHARMACY DEPARTMENT ON 82751763 or email: chris.alderman@health.sa.gov.au
Information in this E-Bulletin is derived from critical analysis of available evidence – individual clinical circumstances should be considered when making treatment decisions. You are welcome to forward this E-bulletin by email to others you might feel would be interested, or to print the E-Bulletin for wider distribution. Reproduction of this material is permissible for purposes of individual study or research.