

### What is already known on this topic

Implantation of implantable cardioverter defibrillators in England lags behind most western European and North American countries

### What this study adds

An inverse care law seems to be operating on implantation of new implantable cardioverter defibrillators in England

Demand for implantable cardioverter defibrillators is likely to increase in the near future, and a pressing need exists to tackle any inequity and perceived barriers to care

provided the 1998-2000 dataset in which data quality and completeness had been improved, and commented on drafts of the paper. PJR oversaw the project, supervised JP and DLC, supplied epidemiology expertise for analyses, and commented on drafts of the paper.

Funding: AG and JP are grant holders of HTA grant 93/23/04 (a review of the evidence on the effects and costs of implantable cardioverter defibrillator (ICD) therapy in different patient groups, and modelling of cost effectiveness and cost utility for these groups in a UK context). Professor Martin Buxton is the principal investigator of this study. DLC is funded by an NHS South East Research and Development Fellowship.

Competing interests: None declared.

Ethical approval: Not needed for this study, as it used aggregated anonymised data and no patient contact.

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## DRUG POINTS

# Nausea and vomiting due to insulin glargine in patient with type 1 diabetes mellitus

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Insulin glargine is a new insulin analogue with delayed absorption and a prolonged duration of action.<sup>1</sup> A 34 year old woman who had had type 1 diabetes for six years had previously been treated with premixed biphasic isophane insulin (Humulin M3), twice a day. This regimen had been changed to a basal bolus regimen of Actrapid and Insulatard during pregnancy, but she subsequently resumed twice daily injections (but this time with Mixtard 30). She reported no side effects on any of these preparations. She had no other serious illness and no complications of diabetes.

After a period of suboptimal glycaemic control, she was changed to a basal bolus regimen of Actrapid and insulin glargine. Within 24 hours she complained of nausea. Pregnancy and infection were excluded, but she remained nauseous for six weeks. During this time her glycaemic control improved (her HbA<sub>1c</sub> concentration decreased from 9.8% to 8.6%), but the nausea began to lead to frequent vomiting, which could not be controlled with antiemetics. Insulin glargine was replaced with Insulatard, and her symptoms settled over two days.

Over the next three months she remained well, but her glycaemic control deteriorated and she requested that she try insulin glargine again. Nausea returned within a few hours and continued for several days until insulin glargine was again withdrawn.

Glargine is usually well tolerated, with side effects limited to irritation at the injection site.<sup>2</sup> The Committee on Safety of Medicines (via its "yellow card" reporting scheme) has received three other reports of nausea and two of vomiting since the product was launched in the United Kingdom (see [www.yellowcard.gov.uk](http://www.yellowcard.gov.uk)). These side effects are clearly important in type 1 diabetes since they may predispose to diabetic ketoacidosis. Moreover,

prolonged periods of nausea may be erroneously attributed to gastric autonomic neuropathy, leading to unnecessary investigation and treatment.

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Competing interests: SCB has received funding from Aventis and other insulin manufacturers for attending symposiums, organising educational sessions, and supporting employment of staff.

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### Endpiece

#### God, surgeon, medicine, patient

Hippocrates in his Aphorisms, as Galen writeth sure,  
Saieth, foure things are needfull to every kind of cure,  
The first, saith he, to God belongeth the chiefest part,  
The second to the Surgeon, who doth apply the art,  
The third unto the medicine, that is dame Natures  
friend  
The fourth unto the patient, with whom I heere will  
end.

Clowes W. *A profitable and necessarie booke of observations*. London: 1596

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