# LOTHIAN PRESCRIBING BULLETIN

**Supporting prescribing excellence - informing colleagues in primary and secondary care**

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## In this issue ...



# Blood Glucose Monitoring - Advice from the LJF

Within Lothian the cost of Home Blood Glucose Monitoring (HBGM) test strips is currently greater than £2 million a year (this is more than the cost of oral antidiabetic drugs), compared to £1.24 million in 2001 (an increase of 75% in only 4 years). This is the result of the increase in the total number of prescriptions for HBGM test strips, the quantity of test strips per prescription and an increase in the cost of the strips themselves so that the current average cost per pack of HBGM test strips in Lothian is £15.71.

The Lothian Joint Formulary (LJF) recently produced recommendations for HBGM technology following an evaluation by the Lothian Home Blood Glucose Monitoring (Meter) Working Group.

A set of criteria was developed so that the usefulness and acceptability of meters to be used by people with diabetes could be objectively assessed. Meters with published independent evaluations commissioned by the NHS Centre for Evidence-based Purchasing were evaluated. The group assessed HBGM meter/strip combinations against measures of reproducibility, accuracy and patient acceptability and usefulness.

**LJF first choice recommendations for meters:**

**Accu-Chek® Aviva**
**Accu-Chek® Compact**
**One Touch® Ultra®**
**One Touch® Ultra Smart®**
**Optium Xceed®**

*Choice of meter depends on experience and patient preference and capabilities, e.g. visual acuity, manual dexterity. Meters are not available on prescription. Patients may purchase any meter but should do so only following expert advice from a suitably trained person. Strips may be prescribed and can also be bought over-the-counter.*

## Key Advice on Blood Glucose Monitoring

**LJF section 6.1.6 - www.ljf.scot.nhs.uk**

- Home blood glucose monitoring need not be performed by:
  * those treated by diet alone where $HbA_{1c}$ is <6.5%
  * those who are well controlled on metformin and/or glitazone and stable as indicated by $HbA_{1c}$ <7%.
  In these cases, a six-monthly estimate of $HbA_{1c}$ is adequate to monitor glycaemic control.
- Home blood glucose monitoring in non-insulin treated Type 2 diabetes and steroid-induced diabetes should routinely be undertaken:
  * where control is poor
  * where treatment change is indicated especially where there is a risk of hypoglycaemia
  * to monitor a treatment change
  * in patients on sulphonylureas with symptoms which may be due to unrecognised hypoglycaemia.
  In such cases, blood glucose monitoring should not require to be performed routinely on more than 2 days in the week or more than twice in the day although in some cases more frequent testing may be required. The timing of the samples will depend on the particular case but a fasting value is useful. Correct meter care and quality control are essential when meters are used.
- Patients must be aware of how to interpret the results.
- Meters are obtainable from centres with expert advice from a suitably trained person.
- Strips deteriorate rapidly if exposed to the atmosphere.


*Thanks to Sean MacBride-Stewart, Chair of the Lothian Home Blood Glucose Monitoring (Meter) Working Group, for contributing to this article.*



**Contact the editorial team at ljf@lhb.scot.nhs.uk**

# Treatment of adults with diabetes - Specialist comment on LJF recommendations

*Good glucose control ($HbA_{1c}$ <7.5%, ambient blood glucose levels <7mmol/L) minimises the risk of vascular disease in diabetes. In type 2 diabetes glucose levels usually rise over time and so pharmacological therapy will be necessary for most individuals.*

Metformin is the first choice oral hypoglycaemic drug for type 2 diabetes, and the only oral hypoglycaemic agent with a proven survival benefit. Gastro-intestinal side effects occur in about a quarter of patients and can be minimised by starting at a low dose and taking the drug with food. Lactic acidosis is a rare but serious side effect, and metformin is therefore contraindicated in renal impairment (eGFR <60 mL/min), severe cardiac or hepatic failure, or if there is a history of pancreatitis. In individuals with a normal or low BMI, insulin deficiency may be more pathogenic than insulin resistance, and traditionally a sulphonylurea is often used first-line in such cases, but metformin does not need to be limited to overweight patients. In those in whom metformin is contraindicated or not tolerated, a sulphonylurea or glitazone can be used.

When a second oral agent is required to maintain appropriate glycaemic control the evidence base is less clear. Sulphonylureas have been the usual addition and are generally well tolerated, although may cause hypoglycaemia (and so should be given before main meals) and weight gain. In those with established vascular disease a glitazone (thiazolidinedione) may be preferable to a sulphonylurea. These are new agents that lower blood glucose by reducing insulin resistance. They take about eight weeks to exert their full therapeutic effect. They can be associated with fluid retention and thus must be used cautiously in those at risk of cardiac failure. Pioglitazone may be prescribed as monotherapy for patients with type 2 diabetes in whom consideration is otherwise being given to commencing insulin therapy, and should be restricted to patients who have experienced severe hypoglycaemia or in whom metformin and sulphonylureas are contraindicated or not tolerated. Rosiglitazone may be given in combination with metformin or sulphonylureas, and triple therapy with these three agents may be used instead of insulin. The triple therapy must be initiated and monitored only by physicians experienced in the treatment of diabetes mellitus. Glitazones may only be prescribed in combination with insulin by a diabetologist.

Presently, insulin therapy is initiated and monitored in secondary care. Fifty per cent of patients on insulin have type 2 diabetes, and this group is growing in size. The introduction of insulin will be necessary for many with type 2 diabetes, with large doses (>1 unit/kg) often required due to insulin resistance. Insulin regimes are numerous and one size does not fit all. In those with type 2 diabetes requiring insulin therapy, oral hypoglycaemic agents are often continued (usually with the exception of glitazones), although the best insulin regimen for these patients is yet to be scientifically determined. Hypoglycaemia and weight gain are the main side effects of insulin therapy. Some people with long-standing type 1 diabetes prefer animal insulins, due to improved hypoglycaemic awareness. Analogues of fast-acting insulins (Humalog®, Novorapid®) give less hypoglycaemia in some, and new long-acting insulins (Lantus®, Levemir®) may cause less variance in blood glucose levels and less hypoglycaemia.

**Lothian Joint Formulary (Adults) www.ljf.scot.nhs.uk**

**6.1.2 Oral hypoglycaemic agents**

**biguanides**

| | |
|---|---|
| **First choice:** | **metformin** |

**sulphonylureas**

| | |
|---|---|
| **First choices:** | **gliclazide**<br>*or* **glipizide** |

**glitazones**

| | |
|---|---|
| **First choices:** | **pioglitazone**<br>*or* **rosiglitazone** |

*Thanks to Dr James Walker, Consultant Endocrinologist, St John's Hospital for contributing to this article.*

# Angiotensin-converting enzyme inhibitors

The Lothian Joint Formulary (LJF) Cardiovascular Working Group recently reviewed the LJF recommendations for angiotensin-converting enzyme inhibitors (ACEIs) and would like to highlight the following changes:

**2.5.5.1 Angiotensin-converting enzyme inhibitors**

| | |
|---|---|
| *Hypertension:* | |
| **First choice:** | **lisinopril** |
| *Heart failure and prophylaxis of cardiovascular events:* | |
| **First choices:** | **lisinopril**<br>*or* **ramipril** |

Enalapril is no longer first choice in the LJF. Lisinopril is now the preferred once-daily preparation for hypertension, and is more cost effective. Patients who are well controlled on enalapril do not need to be changed to an alternative ACEI. ACEIs should be considered first-line antihypertensives in people with diabetes. Please refer to the Lothian Hypertension Guidelines[1].

**Reference**

1. Lothian Hypertension Guidelines 2005. http://www.ljf.scot.nhs.uk/lpb/LPB15_Hypertension.pdf

# Prostate cancer and gonadorelin analogues

Endocrine therapies are commonly used in the management of patients with prostate cancer. Endocrine therapy may be given for up to 3 months to down-stage locally advanced tumours before definitive local treatment with radiotherapy. Locally advanced prostate cancers unsuitable for local therapy may be treated by a gonadorelin analogue, or by bicalutamide alone in younger men who wish to retain potency. Gonadorelin analogues are also used in metastatic prostate cancer, with initial anti-androgen cover to prevent tumour flare, and the combination of a gonadorelin analogue and an anti-androgen is used to provide maximal androgen blockade in second-line treatment of metastatic disease. Gonadorelin analogues cause side-effects similar to orchidectomy such as gynaecomastia, reduced libido, hot flushes, mood changes and sweats.

The LJF recommendation regarding gonadorelin analogues for prostate cancer has changed. The first choice is now triptorelin; goserelin and leuprorelin are second choice. Triptorelin and leuprorelin are licensed for metastatic prostate cancer while goserelin is licensed for all stages of prostate cancer. Endocrine therapy must only be initiated on the advice of a hospital specialist.

A shared care protocol (SCP) is already in place for gonadorelin analogues that covers goserelin and leuprorelin. A triptorelin SCP is in development.

**8.3.4.2 Prostate cancer and gonadorelin analogues**

*Endocrine therapy must only be initiated on the advice of a hospital specialist*

**Gonadorelin analogues**

| | |
|---|---|
| **First choice:** | **triptorelin** |
| **Second choices:** | **goserelin**<br>*or* **leuprorelin acetate** |

***See LJF website www.ljf.scot.nhs.uk for further information***

# Learn more about the Lothian Joint Formulary

**Continuing Professional Development**
Self-learning modules are now available for GPs (LJF and eLJF-GPASS), hospital doctors, hospital pharmacists, pharmacists working in primary care and community pharmacists. The modules, developed by members of the LJF Implementation Working Group, may also be of interest to nurses. The GP modules are approved for 3 hours of accredited learning as part of the Educational Providers Accreditation Scheme Scotland (EPASS). For pharmacists, this learning activity has been designed for recording as Continuing Professional Development (CPD) in line with Royal Pharmaceutical Society documentation.

Hospital doctors can also use their module for CPD. The modules are available on the LJF website www.ljf.scot.nhs.uk.

**eLJF-GPASS training sessions**
Further eLJF-GPASS training sessions have been organised at The Lister, Hill Square, Edinburgh for Thursday 25 May and Thursday 22 June 2006. These sessions run from 2.00pm to 4.30pm and there are 12 places available at each session.
For further information or to book a place, please contact your Primary Care Pharmacist or the Medicines Management Team Secretary, Margaret.Lawrence@lpct.scot.nhs.uk.

# Insulin administration error

The Pan-Lothian Medication Incident Group wish to highlight the following points from an incident where insulin was administered incorrectly:

- Only U100 insulin syringes [0.3mL, 0.5mL or 1mL] are to be used to draw up and administer insulin
- On wards/units that use normal 1mL syringes as well as U100 insulin syringes, extra vigilance should be taken by staff.

# Doctors should not treat themselves or their families

**Can a doctor write a prescription for him/herself or a member of his/her family?**
This is a matter of common sense and best practice. Each professional regulatory body (e.g. doctors, nurses, pharmacists) has its own guidance which should be referred to.

***Doctors should not treat themselves or their families***[1,2]
It is good practice for doctors and their families to be registered with a general practitioner outside the family who takes responsibility for their health care. This gives the doctor and family members ready access to objective advice and avoids the conflicts of interest that can arise when doctors treat themselves or those close to them. From time to time, sad cases occur where a doctor's loss of objectivity in treating a family member results in misconduct; or where self-medication - for example, with controlled drugs - leads to drug misuse. It is hard to lay down an absolute rule: it makes sense for a doctor to treat minor ailments, or take emergency action where necessary. But doctors should avoid treating themselves or close family members wherever possible. This is a matter of common sense as well as good medical practice.

**Can a pharmacist refuse to dispense a prescription that he/she feels is inappropriate in the above circumstances?**
When faced with ethical dilemmas pharmacists are expected to use their professional judgement in deciding the most appropriate course of action[3].


**References:**
1. GMC. July 1998. http://www.gmc-uk.org/guidance/library/doctors_self_treatment.asp
2. GMC. Good Medical Practice. Consultation draft. August 2005. http://www.gmc-uk.org/GMP_Consultation/documents/Good_Medical_Practice.pdf
3. Code of Ethics and Standards. Royal Pharmaceutical Society of Great Britain. Last updated 3 August 2005. http://www.rpsgb.org.uk/pdfs/coe050803



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