

Weiterbil-dung in der Arzneimittel-information

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Southampton University Hospitals

Jan 2009

Overview of session

- UK Medicines Information (MI) network
- Training junior hospital pharmacists in MI
 - Objectives
 - Ideas for learning activities
 - Training Workbook and MiCAL
 - Risks associated with training in MI
 - Strategies to minimise the risks

UK Medicines Information

- 16 regional centres supporting 250 local centres across UK
- Pharmacists and technicians
- National strategy set by *UKMi Executive*
- Support to primary and secondary care practitioners and patients



UK Medicines Information

➤ Our roles

- Clinical enquiry answering
 - Including some specialist services (e.g. pregnancy)
- Managed entry of new medicines
 - National and local
- Quality assurance
 - National standards for e.g. enquiry answering
- Supporting other information providers
 - e.g. “NHS Direct”
- National electronic Library for Medicines (NeLM)
- Research
- Training

Clinical enquiry answering

- Across UK, the service answers about half a million enquiries annually.

At Southampton:

- 94% are about individual patients.
- 66% answered within 1 hour.
- 50% from pharmacists.
- 30% admin/dose; 17% choosing therapy; 15% interactions; 14% side effects.
- 17% answered in writing.

Our websites

- UKMi site www.ukmi.nhs.uk
 - Our national standards and resources for information pharmacists.
 - Mostly free access.

- NeLM www.nelm.nhs.uk
 - Information about medicines for professionals.
 - Mostly free access.
 - Can register for free daily news email.

UKMi Information



34th UKMi Practice Development Seminar

information



Information

Welcome to the UK Medicines Information website.

This site is designed to support the UKMi network. It hosts our strategy, policies, clinical governance standards and training materials, together with minutes of meetings of the UKMi Executive and its working groups.

UKMi resources to support medicines management initiatives are hosted by the National electronic Library for Medicines ([NeLM](#)).

Resources for the public can be found at [NHS Direct](#).

For UK health professionals, click on the map to search for your local medicines information centre.

MI News

- Medicines Q&A: **Finding SPCs not on the eMC** [[LINK](#)] **NEW** (14/01/2009)
- Medicines Q&A: **Corticosteroids for adrenal insufficiency and risk of osteoporosis** [[LINK](#)] **NEW** (14/01/2009)
- Medicines evaluation (LNFG): **Botulinum toxin A (Xeomin)** [[LINK](#)] **NEW** (09/01/2009)
- Medicines Q&A: **Saliva substitutes - selecting and prescribing** (update) [[LINK](#)] **NEW** (09/01/2009)
- Medicines Q&A: **Managing depression during breast feeding** [[LINK](#)] (09/01/2009)
- Medicine Q&A: **Dosing in renal impairment** (update) [[LINK](#)] (07/01/2009)
- Horizon scanning: **Prescribing Outlook - cost calculator 2008** (registration required) [[LINK](#)] (07/01/2009)
- Medicines evaluation: **Icatibant** [[LINK](#)] (07/01/2009)
- Medicines evaluation: **Retapamulin 1% ointment** [[LINK](#)] (07/01/2009)
- Medicines Q&A: **Proton pump inhibitor use during breast feeding** (update) [[LINK](#)] (07/01/2009)

[more >>>](#)

Clinical Governance	Introduction
Information Technology	Working Group
Manpower & Training	Service Standards
New Products	Enquiry Answering
NHS Direct	Risk Management
Pharmline	SOPs
Research	Incident Reporting
Specialist Services	Service Development
UKMi Medicines Q&As	Legal & Ethical

Clinical Governance | Service Standards

Introduction

The UKMi standards cover the following:

- A. Enquiry Answering
- B. Education and Training
- C. Publications
- D. Clinical Governance
- E. Risk Management
- F. Specialist Advisory Services. (NB. These standards apply to all designated specialist advisory services listed in the UKMi directory)

- [Simple list of standards A - E](#)
- [Detailed list of standards A - E](#)
- [List of standards for Specialist Advisory Services](#)

Rolling Programme to Review UKMi Standards

- [Rolling programme](#)

Audit Toolkit

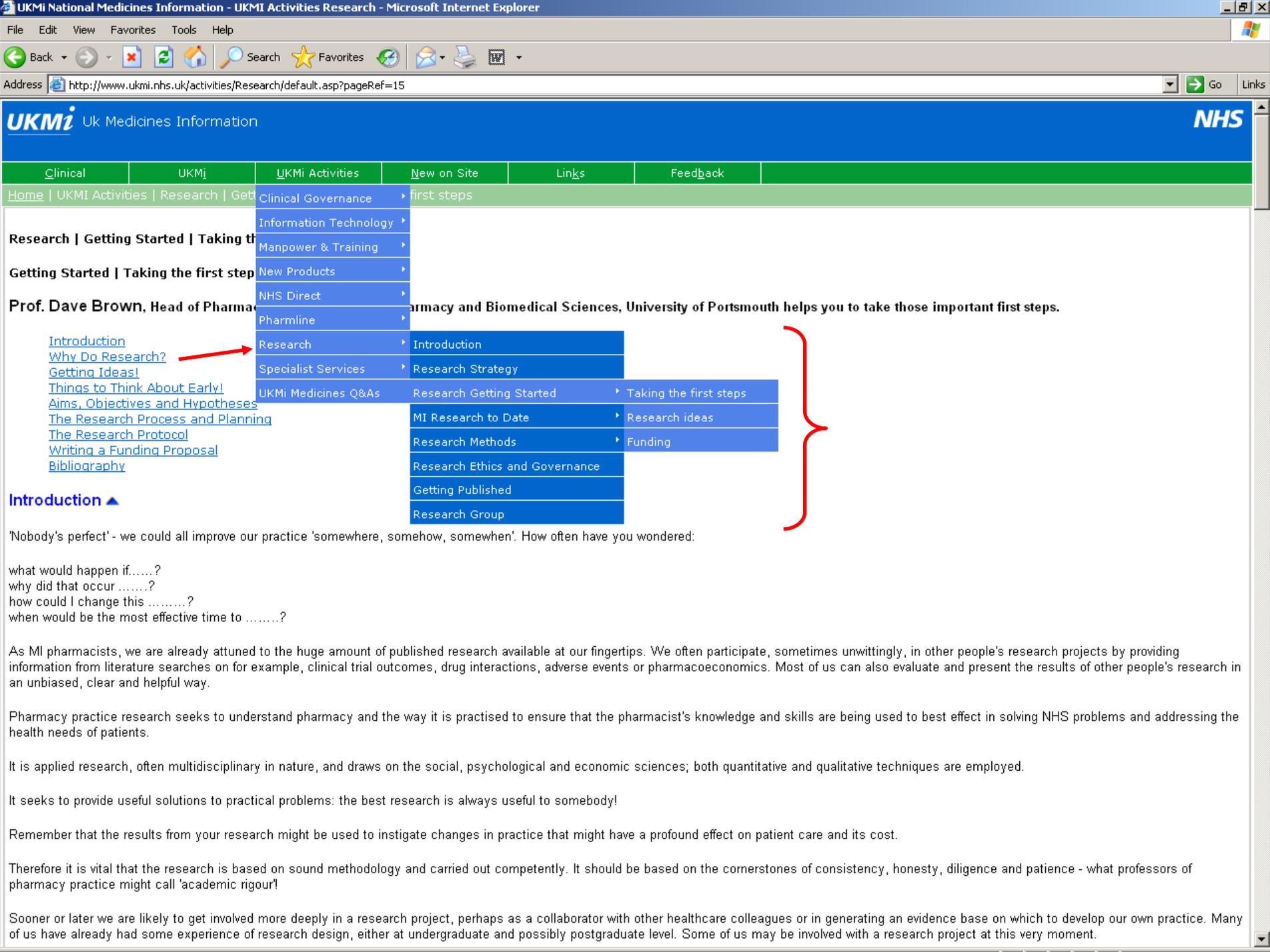
NB. This replaces the previous Assessors Pack.

The toolkit is a protocol for measuring quality of medicines information services.

- [Audit Toolkit](#)

Audit Report

- [Audit Report Template](#)



- [Introduction](#)
- [Why Do Research?](#)
- [Getting Ideas!](#)
- [Things to Think About Early!](#)
- [Aims, Objectives and Hypotheses](#)
- [The Research Process and Planning](#)
- [The Research Protocol](#)
- [Writing a Funding Proposal](#)
- [Bibliography](#)



- Pharmline
- Research
 - Introduction
 - Research Strategy
 - Research Getting Started
 - Taking the first steps
 - Research ideas
 - Funding
 - MI Research to Date
 - Research Methods
 - Research Ethics and Governance
 - Getting Published
 - Research Group
- Specialist Services
- UKMI Medicines Q&As



Introduction ▲

'Nobody's perfect' - we could all improve our practice 'somewhere, somehow, somewhen'. How often have you wondered:

- what would happen if.....?
- why did that occur.....?
- how could I change this.....?
- when would be the most effective time to.....?

As MI pharmacists, we are already attuned to the huge amount of published research available at our fingertips. We often participate, sometimes unwittingly, in other people's research projects by providing information from literature searches on for example, clinical trial outcomes, drug interactions, adverse events or pharmacoconomics. Most of us can also evaluate and present the results of other people's research in an unbiased, clear and helpful way.

Pharmacy practice research seeks to understand pharmacy and the way it is practised to ensure that the pharmacist's knowledge and skills are being used to best effect in solving NHS problems and addressing the health needs of patients.

It is applied research, often multidisciplinary in nature, and draws on the social, psychological and economic sciences; both quantitative and qualitative techniques are employed.

It seeks to provide useful solutions to practical problems: the best research is always useful to somebody!

Remember that the results from your research might be used to instigate changes in practice that might have a profound effect on patient care and its cost.

Therefore it is vital that the research is based on sound methodology and carried out competently. It should be based on the cornerstones of consistency, honesty, diligence and patience - what professors of pharmacy practice might call 'academic rigour'!

Sooner or later we are likely to get involved more deeply in a research project, perhaps as a collaborator with other healthcare colleagues or in generating an evidence base on which to develop our own practice. Many of us have already had some experience of research design, either at undergraduate and possibly postgraduate level. Some of us may be involved with a research project at this very moment.

NeLM Subscription

The NeLM Newsletter delivers the latest medicine news, reviews and updates to you in one daily email. Subscription is optional.

Email address (required if subscribing)

This will be the address that the newsletter will be sent to. You may use any email address.

Your email address

Re-type your email address

Additional subscriptions (optional)

By subscribing to the NeLM Newsletter you will automatically get the latest News and Updates from the NeLM News Team. You can also receive the latest information from other areas of the NeLM in the same email by choosing from the list below.

- | | | |
|-----------------------------------------------------|-------------------------------------------------|---------------------------------------------|
| <input type="checkbox"/> Guidelines | <input type="checkbox"/> Patient Safety | <input type="checkbox"/> Drugs in Pregnancy |
| <input type="checkbox"/> Drug Specific Reviews | <input type="checkbox"/> Complementary Medicine | <input type="checkbox"/> SPC Changes |
| <input type="checkbox"/> Drug Class Focused Reviews | <input type="checkbox"/> Medicines Q & A | <input type="checkbox"/> Health In Focus |
| <input type="checkbox"/> Disease Focused Reviews | | |

Personalisation of content (optional)

By providing this information we will be able to customise the content of the NeLM Newsletter around your professional requirements

Professional role

<please select> 

Please select area of medical interest

- | | | |
|---------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------|
| <input type="checkbox"/> Anaesthesia | <input type="checkbox"/> Immunology and vaccination | <input type="checkbox"/> Pain control |
| <input type="checkbox"/> Bone Diseases | <input type="checkbox"/> Infections | <input type="checkbox"/> Palliative care |
| <input type="checkbox"/> Cardiovascular Medicine | <input type="checkbox"/> Infectious Diseases | <input type="checkbox"/> Preventative medicines |
| <input type="checkbox"/> Cerebrovascular Disorders | <input type="checkbox"/> Intensive Care (ICU) | <input type="checkbox"/> Radiology |
| <input type="checkbox"/> Complementary Medicine | <input type="checkbox"/> Liver disease | <input type="checkbox"/> Renal medicine |
| <input type="checkbox"/> Dentistry | <input type="checkbox"/> Menopause / hormone replacement therapy (HRT) | <input type="checkbox"/> Reproductive medicine |
| <input type="checkbox"/> Dermatology | <input type="checkbox"/> Mental Health | <input type="checkbox"/> Respiratory Medicine |
| <input type="checkbox"/> Ear, Nose and Throat (ENT) disorders | <input type="checkbox"/> Neurology | <input type="checkbox"/> Rheumatology |
| <input type="checkbox"/> Emergency Medicine | <input type="checkbox"/> Nutrition and Metabolism | <input type="checkbox"/> Sports medicine |
| <input type="checkbox"/> Endocrinology | <input type="checkbox"/> Obstetrics & Gynaecology | <input type="checkbox"/> Surgery |
| <input type="checkbox"/> Family planning | <input type="checkbox"/> Oncology | <input type="checkbox"/> Travel medicine |
| <input type="checkbox"/> Gastroenterology | <input type="checkbox"/> Ophthalmology | <input type="checkbox"/> Urology |
| <input type="checkbox"/> Geriatric Medicine | <input type="checkbox"/> Paediatrics | <input type="checkbox"/> Wound Management |
| <input type="checkbox"/> Haematology | | |

National electronic Library for Medicines



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Browse by NeLM area: [Evidence](#) | [Other Library Updates](#) | **News** | [Health In Focus](#) | [Community Areas](#) | [Useful Links](#)

NeLM news service

Systematic review and meta-analysis of lamotrigine for bipolar depression

Reference: **Br J Psych** 2009; **194**: 4-9.

Source: **Br J Psychiatry**

Date published: **08/01/2009 14:43**

Summary

by: Yuet Wan

The efficacy of lamotrigine in bipolar depressive episodes has been assessed in a systematic review and meta-analysis of individual patient data from RCTs comparing lamotrigine with placebo. Data were obtained on 1072 participants from 5 RCTs and the following findings were reported:

- More individuals treated with lamotrigine than placebo responded to treatment (relative risk = 1.27, 95% CI, 1.09 to 1.47, $p = 0.002$) on the Hamilton Rating Scale for Depression (HRSD).
- The above finding was also reflected (1.22; 1.06 to 1.41, $p = 0.005$) when measured on the Montgomery-Åsberg Depression Rating Scale (MADRS).
- There was an interaction ($p = 0.04$) by baseline severity of depression: lamotrigine was superior to placebo in people with HRSD score > 24 (1.47; 1.16 to 1.87, $p = 0.001$) but not in people with HRSD score ≤ 24 (1.07; 0.90 to 1.27, $p = 0.445$).

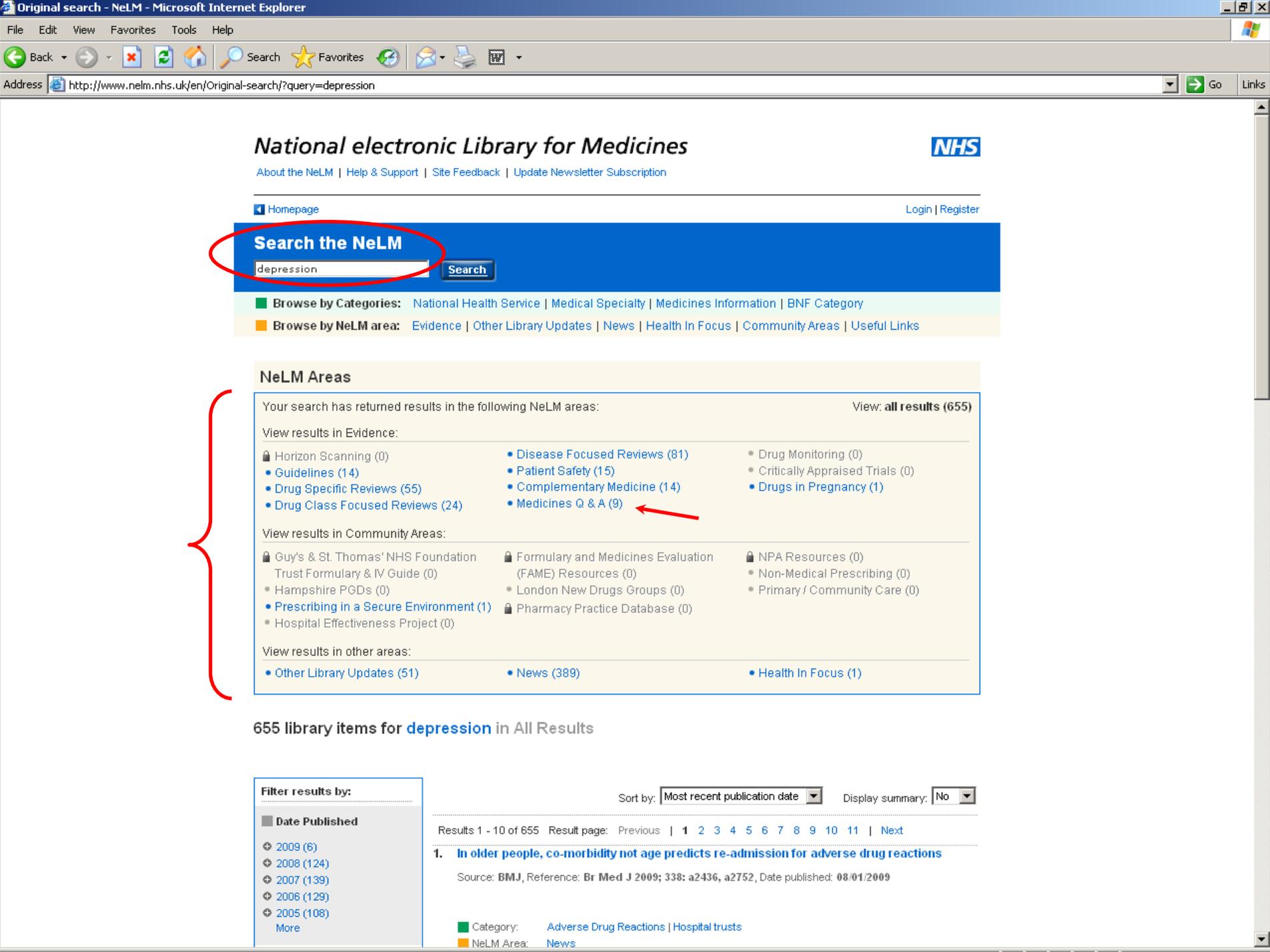
The researchers conclude from these findings that the overall effect of lamotrigine vs. placebo on depressive symptoms in the depressed phase of bipolar disorder was modest.

About this library entry

Category: [4.2.3 Antimanic drugs](#) | [4.8 Antiepileptics](#) | [Drug reviews](#) | [Mood disorders \(including depression\)](#)

NeLM area: [News](#)

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Search the NeLM

depression

Search

Browse by Categories: [National Health Service](#) | [Medical Specialty](#) | [Medicines Information](#) | [BNF Category](#)

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NeLM Areas

Your search has returned results in the following NeLM areas:

View: **all results (655)**

View results in Evidence:

- Horizon Scanning (0)
- Guidelines (14)
- Drug Specific Reviews (55)
- Drug Class Focused Reviews (24)
- Disease Focused Reviews (81)
- Patient Safety (15)
- Complementary Medicine (14)
- Medicines Q & A (9)
- Drug Monitoring (0)
- Critically Appraised Trials (0)
- Drugs in Pregnancy (1)

View results in Community Areas:

- Guy's & St. Thomas' NHS Foundation Trust Formulary & IV Guide (0)
- Hampshire PGDs (0)
- Prescribing in a Secure Environment (1)
- Hospital Effectiveness Project (0)
- Formulary and Medicines Evaluation (FAME) Resources (0)
- London New Drugs Groups (0)
- Pharmacy Practice Database (0)
- NPA Resources (0)
- Non-Medical Prescribing (0)
- Primary / Community Care (0)

View results in other areas:

- Other Library Updates (51)
- News (389)
- Health In Focus (1)

655 library items for **depression** in All Results

Filter results by:

Date Published

- 2009 (6)
- 2008 (124)
- 2007 (139)
- 2006 (129)
- 2005 (108)
- More

Sort by: Most recent publication date

Display summary: No

Results 1 - 10 of 655 Result page: Previous | 1 2 3 4 5 6 7 8 9 10 11 | Next

1. **In older people, co-morbidity not age predicts re-admission for adverse drug reactions**

Source: **BMJ**, Reference: **Br Med J** 2009; 338: a2436, a2752, Date published: 08/01/2009

Category: [Adverse Drug Reactions](#) | [Hospital trusts](#)

NeLM Area: [News](#)

Filter results by:

 Date Published

- 2009 (0)
- 2008 (5)
- 2007 (2)
- 2006 (2)
- 2005 (0)

 Category

- BNF Category
- Medical Specialty
- Medicines Information
- National Health Service

Sort by: Display summary: Results 1 - 9 of 9 Result page: [Previous](#) | **1** | [Next](#)**1. Can tricyclic antidepressants cause tinnitus?**Source: **Wessex Drug and Medicines Information Centre**, Date published: 27/04/2006 , Expires on: 31/03/2013
 Category: [4.3.1 Tricyclic and related antidepressant drugs](#) | [Tinnitus](#)

 NeLM Area: [Evidence > Medicines Q & A](#)
[View complete report](#)
2. How should antidepressants be discontinued?Source: **Welsh Medicines Information Centre**, Date published: 19/05/2008 , Expires on: 31/03/2010
 Category: [4.3 Antidepressant drugs](#) | [FAQs](#) | [NHS Direct / walk-in](#)

 NeLM Area: [Evidence > Medicines Q & A](#)
[View complete report](#)
3. Switching between monoamine oxidase inhibitors and SSRI or tricyclic antidepressantsSource: **North West Medicines Information Centre**, Date published: 02/08/2007 , Expires on: 31/07/2009
 Category: [4.3 Antidepressant drugs](#) | [FAQs](#) | [Mental Health](#)

 NeLM Area: [Evidence > Medicines Q & A](#)
[View complete report](#)
4. Switching between tricyclic, SSRI and related antidepressantsSource: **North West Medicines Information Centre**, Date published: 02/08/2007 , Expires on: 31/07/2009
 Category: [4.3 Antidepressant drugs](#) | [FAQs](#) | [Mood disorders \(including depression\)](#)

 NeLM Area: [Evidence > Medicines Q & A](#)
[View complete report](#)
5. What is the antidepressant of choice in ischaemic heart disease?Source: **London Medicines Information Service**, Date published: 03/06/2008 , Expires on: 31/12/2009
 Category: [2: Cardiovascular system](#) | [4.3 Antidepressant drugs](#) | [Cardiovascular Medicine](#) | [FAQs](#) | [Mood disorders \(including depression\)](#)

 NeLM Area: [Evidence > Medicines Q & A](#)
[QandA55_3_final.doc](#)
6. What is the most appropriate antidepressant to use in epileptics?Source: **London Medicines Information Service**, Date published: 07/05/2008 , Expires on: 31/03/2010

Training UK hospital pharmacists

Training UK hospital pharmacists

- Four year undergraduate degree (MPharm)
- One year pre-registration hospital placement and examination
- One to two year post-registration hospital-based rotation with further study and examinations
- UKMi standards aim to streamline training

UKMi training standards

- Standards apply to all hospital-based pre-reg and post-reg pharmacists (not undergraduates)
- Minimum of 4 weeks in MI (although in practice usually longer)
- Appropriate supervision
- Assessed against competency standards (RPSGB or UKMi Framework)
- Supported by the UKMi Training Workbook and MiCAL

UKMi training aims and objectives

- **Overall aim of the training is to improve quality of patient care and reduce risk**
- To ask all the correct questions when taking in an enquiry
- To search for information from paper and electronic sources
- To evaluate the information found
- To communicate the answer to the enquiry clearly

Learning activities

- Handling 'real' enquiries
- UKMi Training Workbook
- MiCAL
- Role play
- Coaching
- Shadowing
- MI team training sessions



Developing the Training Workbook

- In 2002 existing training material
 - Out-of-date
 - Inadequate
 - Varied across the UKMi network
- New training material
 - Enable self-directed learning and small group tutor-led sessions
 - Support pre-reg and post-registration pharmacists
 - Easy to update
 - Record of achievement/competence /feedback

Developing the Training Workbook

- Workbook paper-based format (cf computer-based programme)
- Proposed structure
 - 4 introductory sections
 - How to use the Workbook
 - Structure of UKMi
 - Enquiry answering techniques
 - Searching for information
 - 20 tutorials on selected clinical enquiry types

Developing the Training Workbook

- Tutorials based around most common clinical enquiry themes including;
 - Pregnancy
 - Breast-feeding
 - Drug interactions
 - Adverse drug reactions
 - Parenteral drug compatibility
 - Drugs in liver disease
 - Drugs in renal disease



Developing the Training Workbook

- Most tutorials - standard structure
 - Essential background information about the topic
 - Suggested questions to ask an enquirer
 - Suggested information resources to use
 - Exercises to test understanding (self-directed and tutor-led)
 - Real examples of questions and answers

4. Drugs in Pregnancy



General Principles

- ⊙ Agents or factors that cross the placenta to cause congenital malformations are defined as teratogens (from the Greek *teratos* meaning monster). This strict definition is often relaxed to include any agent that directly or indirectly, causes structural or functional abnormalities in the foetus or child after birth when administered to a pregnant woman. Teratogens do not cause abnormalities in all foetuses exposed at the critical period. For example thalidomide, which is a highly teratogenic drug, caused abnormalities in less than half of all foetuses exposed during the critical period.
- ⊙ The incidence of major congenital malformations in the general population is estimated to be between 2-3%. Over 75% of these malformations are of unknown aetiology; only 1-2% are thought to be due to drugs.
- ⊙ Exposure to a drug during the pre-embryonic phase of pregnancy, which lasts until the 17th day after conception, will either result in survival of the intact embryo or death. This is sometimes referred to as the 'all or nothing principle'. If most cells are affected the pregnancy is spontaneously miscarried. If only a few cells are damaged the embryo is normally unaffected. Most women will not have missed their first period and not even realise they are pregnant.
- ⊙ The embryo is most vulnerable to teratogens during the embryonic phase, from days 18 to 55, when the cells differentiate and the major organs are formed. If differentiated cells are

Drugs in Pregnancy

Questions to Ask an Enquirer

- ⊙ Assess whether prospective or retrospective exposure (ie is the woman actually pregnant now, or planning to become pregnant?).
- ⊙ Identify the drug, indication, dose, frequency, route and the duration of exposure.
- ⊙ How many weeks pregnant was the woman when she first started taking the drug?
- ⊙ How many weeks pregnant is she now?
- ⊙ Has the woman had any previous pregnancies and what were the outcomes?
- ⊙ What drug has the woman taken during previous pregnancies for any similar condition?
- ⊙ Has the woman taken the drug in question during a previous pregnancy?
- ⊙ Is there a family history of malformations or history of recurrent abortions?
- ⊙ Have any investigations been performed (eg ultrasound scans)?
- ⊙ For chemical exposure enquiries additional questioning may be needed to establish substance involved, approximate quantities, duration of exposure per day, protective measures taken etc.

Example Sources to Use in Answering Enquiries

Example Sources to Use in Answering Enquiries

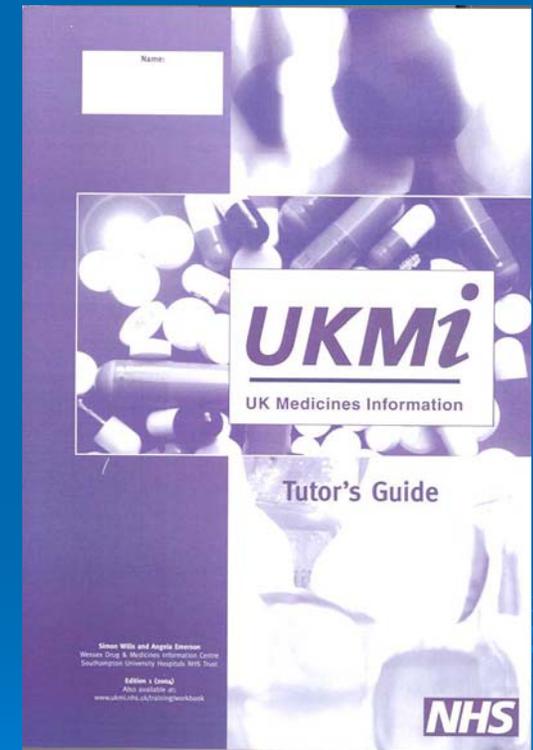
- ⊙ Drugs in Pregnancy and Lactation (Briggs, Freeman and Yaffe, Lippincott Williams and Wilkins 2005) an in-depth textbook that has individual monographs for each drug.
- ⊙ Therapeutics in Pregnancy and Lactation (Lee, Radcliffe Medical Press 2000) a helpful reference book that approaches the subject from a disease perspective.
- ⊙ Medical Disorders in Obstetric Practice (De Swiet, Blackwell Science 2002) a comprehensive textbook on the management of medical disorders in pregnancy.
- ⊙ Drugs During Pregnancy and Lactation (Schaefer, Elsevier Science 2001) written by members of the European National Teratology Information Service, this useful textbook considers drugs by therapeutic class and makes practical recommendations.
- ⊙ Check your in-house enquiry archiving database.
- ⊙ Medline/Embase.
- ⊙ Reprorisk/Reprotox via Micromedex.
- ⊙ SPCs often contraindicate drug use in pregnancy, but manufacturers' Medical Information Departments may be able to offer more information particularly on very new drugs where published literature is often lacking.
- ⊙ The National Teratology Information Service in Newcastle can assist with the answering of enquiries relating to any aspect of drug and chemical exposure in pregnant women or women wishing to become pregnant. Visit the password-protected website (www.spib.axl.co.uk) or phone them direct, but only after a thorough search.

Using the Workbook in practice

- UKMi training standards require;
 - Pre-reg pharmacists to complete first 7 tutorials
 - Post-reg pharmacists to complete next 7 tutorials
- Students aim to complete 1-2 tutorials weekly in the workplace either independently or in small groups
- Tutor gives feedback on exercises and answers trainees' questions
- Supplement with real enquiries to support learning
- Complete and document performance review against agreed competency standards
- Next edition of Workbook due 2009

Supplements to the Workbook

- Quick question guide (see handout)
- Tutor's Guide
 - Support guide to training in MI
 - Planning your time with trainees
 - Interacting with trainees and checking their work
 - Suggested training programme
 - Covers common problem areas
 - Trainee doesn't like answering the phone
 - Too slow
 - Too confident
 - Doesn't document enquiries properly
 - Next edition due 2009, lead centre Wessex



Medicines Information Computer Aided Learning (MiCAL)

- Complements Training Workbook
- Enables a blended learning approach (different learner styles)
- Content
 - General MI knowledge and skills (critical appraisal, searching, writing and referencing)
 - 26 additional practice enquiries to test questioning, searching, appraisal and communicating the answer
 - MiDatabank Trainer

Enquiry

Work In Progress

Search

Adv. Search

Timer is On

MiCAL+MiDatabank

Login

MiCAL + MiDatabank Trainer

Username

Password

MI Centre

OK

Cancel

Please enter your username and password

MiCAL v8 © Copyright 2008 CoAcS Ltd and London MI Service (Northwick Park)

MiDatabank v2.1 © Copyright 2004 - 2008 CoAcS Ltd

In Tray

2



Atorvastatin And Erythromycin - Clinical Significance Of The Interaction?



Open

Due By: **31/01/2009**

Enquirer: **Butler Caroline**

Allocated to **SS**

Comments:

Taken By **DW** on **02/09/20**

In Progress

1



Carbamazepine - Various Adverse Effects



Open

Due By: **31/01/2009**

Enquirer: **Pinder Alan**

Allocated to **SS**

Comments:

Taken By **JR** on **04/09/20**

Awaiting Authorisation

0

Reply Authorised

0

All Pending Enquiries

3

Back Search of Pending Enquiries:

Search

Enquiries Summary:

Today

This Week

This Month

This Year

Received Completed

0 0

Edit Windows MICAL Help

Enquiry Work In Progress Search Adv. Search Sam Smith (SS) Timer is On MiCAL+MiDatabank

Input Research Answer Completion Allocated to: SS Allocate to Me Enq No: 170 Due: 31/01/2009 12:00:00 Recorded Time: 00:07:53 Taken By: DW Status: In Tray

Resources Used: Add Source

Add Source

Paper Source e-Source Advice

Title	Author/Editor	Publis...	Edition	URL	Media	Cate
<Internet Search>					e-Sour...	Gen
<Other E-Source>					e-Sour...	Gen
<Standard Search Pattern>					e-Sour...	Addi
ADIS R & D Insight		ADIS	online	http://...	e-Sour...	Gen
Bandolier		Pain R...	online	www.jr...	e-Sour...	Guid
BNF (British National Formulary)	Mehta D (ed)	BMA &...	online ...	www.b...	e-Sour...	Gen
BNF for Children		BMA, R...	online ...	www.b...	e-Sour...	Paec
BNF for Children (British National Formulary)		BMA, R...	online ...	http://...	e-Sour...	Paec
BP (British Pharmacopoeia)		Britph...	online	www.p...	e-Sour...	Gen
Clinical Evidence	Godlee, F et al	BMJ P...	online	www.n...	e-Sour...	Guid
Drug Interactions	Stockley, I	Pharm...	online ...	www....	e-Sour...	Drug
Drug Tariff		Surelin...	online	www.p...	e-Sour...	Gen
Drugdex		Micro...	online	www.t...	e-Sour...	Gen
FDA (Food & Drug Administration)		FDA	online	www.f...	e-Sour...	Govt
Food Additives and Ingredients Advisory Ass...		Owned...	online	www.f...	e-Sour...	Phar
Google			online	www.g...	e-Sour...	Sear
Handbook of Pharmaceutical Excipients	Rowe RC, Sheske...	Pharm...	3rd ed,...	www....	e-Sour...	Phar
Health Protection Agency		UK gov...		www.h...	e-Sour...	Infe
IDIS World Medicines		IDIS	online	www.i...	e-Sour...	Avai
IV Guide		Consor...	online	http://...	e-Sour...	IV &
Martindale: The Complete Drug Reference	Sweetman, S (ed)	Pharm...	online ...	www....	e-Sour...	Gen
Medline		Nation...	online		e-Sour...	Gen

Cancel OK

Sources Used: Add Source

BNF (British National Formulary)
Martindale: The Complete Drug Reference
Drugdex
<Other E-Source>
Drug Interactions

Source: Drugdex

Edition: online

www.thomsonhc.com/home/dispatch

Date added:

06/01/2009 12:00

Source Notes:

Research:

A Arial 10 B I U     100%  

3.5.1.S Erythromycin

- 1) Interaction Effect: increased **atorvastatin** exposure and an increased risk of myopathy or rhabdomyolysis
- 2) Summary: The coadministration of clarithromycin with **atorvastatin** significantly increased **atorvastatin** exposure (Ams et al, 2002a). Clinically significant rhabdomyolysis has been cited in case reports of patients treated concomitantly with **atorvastatin** and clarithromycin (Sipe et al, 2003a; Ming & Gill, 2003). Similar to clarithromycin, erythromycin is a known inhibitor of cytochrome P450-3A4, for which **atorvastatin** is a substrate. The concomitant administration of erythromycin and **atorvastatin** has the potential to increase the bioavailability of **atorvastatin**. Coadministration of erythromycin and **atorvastatin** may increase plasma concentrations of **atorvastatin** by approximately 40% (Prod Info Lipitor(R), 2004).
- 3) Severity: major
- 4) Onset: delayed
- 5) Substantiation: probable
- 6) Clinical Management: Avoid concomitant use of **atorvastatin** and erythromycin where possible, or use together with great caution. Consider alternate antimicrobial therapy where appropriate. If concomitant therapy is necessary, monitor CK level when erythromycin is added to, changed during, or discontinued from concomitant treatment with **atorvastatin**. Monitor patients for symptoms of myopathy or rhabdomyolysis (myalgias, muscle stiffness and weakness, darkened urine).
- 7) Probable Mechanism: inhibition by erythromycin of cytochrome P450 3A4-mediated **atorvastatin** metabolism

Angela Emerson 06/01/2009 12:06:07--

Attachments

Add...

Input Research Answer Completion

Allocated to: SS

Allocate to Me

Enq No: 170
Taken By: DW

Due: 31/01/2009 12:00:00
Status: In Progress

Recorded Time:
00:20:30

Search Summary
Summary)
ion: online March 2007
: www.bnf.org.uk
e Added: 06/01/2009 11:59:52
rce Notes:
earch:

rce: Martindale: The Complete Drug
erence
ion: online 34th ed, 2004
: www.medicinescomplete.com
e Added: 06/01/2009 12:00:05
rce Notes:
earch:

rce: Drugdex
ion: online
: www.thomsonhc.com/home/dispatch
e Added: 06/01/2009 12:00:10
rce Notes:
earch:
.S Erythromycin
eraction Effect: increased atorvastatin

Answer:

Attachments

Add...
Remove

A Verdana 10 B I U [List Icons] 100%

Consider stopping statin for duration of antibiotic, or monitor for symptoms of myopathy during and after course of antibiotic, or use alternative antibiotic.

--Sam Smith 06/01/2009 12:10:06--

Research and Answer Complete

New Enquiry

Work In Progress

Search

Adv. Search

Sam Smith (SS)

Timer is On

MiCAL+MiDataba

Input

Research

Answer

Completion

Allocated to:

SS

...

Allocate
to Me

Enq No: 170

Taken By: DW

Due: 31/01/2009 12:00:00

Status: In Progress

Recorded Time:

00:21:02

Reply to Enquirer *

Reply Notes

- Telephone
- Letter
- Via Third Person
- Fax
- E-mail
- Person
- Reply Not Possible

Workload Data:

On time:

 Yes
 No

Response Time:

Under 1 Hour

Enquiry Level:

Level 1

Time Taken:

21

min

Accept System Time

Keywords

Add...

Remove

 ATORVASTATIN
 ERYTHROMYCIN
 MYOPATHY
Scan Question and
Answer for keywords:

Auto Keyword

Origin *:

Base Organisation

<none>

Base Organisation

Base Organisation Affiliates

NHS Direct

Non NHS

Other NHS

Primary Care

Secondary Care

Enquiry Number

Enquiry ID:

on 02/09/2008 11:35:00

Print Enquiry...

Enquiry Follow Up/Notes

Edit Last Note...

Remove Last Note...

 Enquiry Completed

compulsory data is missing

Checkbox for 'Research & Answer Complete' not checked

Reply Route is not set

MiCAL

- Complements Training Workbook
- Enables a blended learning approach (different learner styles)

- Content
 - General MI knowledge and skills (critical appraisal, searching, writing and referencing)
 - 26 additional practice enquiries to test questioning, searching, appraisal and communicating the answer
 - MiDatabank Trainer

- **Next edition in 2009, lead centre Northwick Park, London**

Training in MI: what are the risks?

- Using enquiries about real patients
- Balance between minimising the risk and maximising the trainee's learning experience
- IRMIS report September 2008
 - *'Inadequate analysis and search combined with high workload, urgent deadlines and inexperienced staff answering enquiries, continue to be the most frequently occurring cause of errors. In some cases the reporter noted a lack of robust checking procedures or failure of the checking process as contributing to the error'.*

Training in MI: what are the risks?

- You are the MI pharmacist in charge of a busy MI centre answering over 30 enquiries daily with 2 other experienced MI pharmacists
- You are responsible for 2 trainee pharmacists who are halfway through their 6 week MI training programme and are starting to take enquiries over the telephone, undertake their own research and evaluation, and communicate their answers back to enquirers
- Consider where errors may occur and what strategies can be used to minimise risk

Risks associated with training in MI

- Numerous and forever changing
- Relate to
 - Receiving the enquiry
 - Undertaking the research
 - Evaluating the information and communicating the answer

Receiving the enquiry

➤ Minimising the risks

- Role play prior to receiving 'real' enquiries (Workbook and MiCAL)
- Using the Quick Question Guide
- MI pharmacist listens to the trainee receiving the call (telephone technology, data protection)
- MI pharmacist checks that the enquiry is entered correctly into MI Databank and countersigns it
- Timely feedback to the trainee on questioning skills
- Ensure that trainee's clinical pharmacy knowledge is developed and maintained

Undertaking the research

➤ Some examples....

- Incorrect/out-of-date resources used
- Correct resources used incorrectly (i.e. not searched properly)
- Insufficient resources used (i.e. conclusions drawn prematurely)
- Enquiry that is too complex allocated to the trainee
- More than one MI pharmacist checking an individual enquiry
- Not being able to disregard irrelevant information

Undertaking the research

➤ Minimising the risks

- Search strategies
- Training in search techniques throughout placement (Workbook and MiCAL)
- Ensure enquiries are suitable to be answered by trainees (MI pharmacist allocates appropriate enquiries)
- Very careful checking of enquiry and feedback to trainee
- Ensure the same MI pharmacist supervises the trainee throughout the whole enquiry if possible (saves time too)

Standard Search Pattern: Drugs in Breastfeeding

[SPC \(on eMC\)](#)

Drug (incl Generic name, Brand & Manufacturer):
Date last updated:

[Hale \(Medication and Mothers' Milk\)](#)

[Schaefer \(2nd edition, 2007\)](#)

[Briggs \(8th edition, 2008 + paper updates\)](#)

[Lee \(1st edition, 2000\)](#)

[Drugs in Lactation website](#)

[Drugs and Lactation Database \(LactMed\)](#)

[IDIS Web](#)

(State search terms)

[Medline](#)

Dialog (State search terms & dates searched)

[Embase](#)

Full Screen ▾

Close Full Screen

Evaluating information and communicating answers

➤ Some examples....

- Incorrect interpretation of the information found
- Not all the relevant points included in the final answer
- Answer too complex to be communicated verbally (written answer may be more suitable)
- Answer communicated in inappropriate language (e.g. too technical for a patient)
- Answer communicated incorrectly
- Trainee attempts to answer follow-up questions alone

Evaluating information and communicating answers

➤ Minimising the risks

- Training on evaluation, especially information that is conflicting
- Training on how to prepare and communicate the answer (role play, Workbook, MiCAL)
- Careful checking of answer by MI pharmacist before it is communicated
- Follow-up questions anticipated and MI pharmacist and trainee agree boundaries
- MI pharmacist on hand to intervene in phone call if necessary
- Give answer in writing if complex/legal implications

Training in MI: minimising the risks

- Undertake regular risk assessment (proforma on UKMi website)
- Clear standard operating procedures (e.g. how trainees' work is checked)
- Clear responsibility (trainees must have a named supervisor at all times)
- Learning from mistakes

Summary

- Training in MI
 - Challenging but rewarding
 - Support tools and templates

Finally...

- We can all learn from each other!
 - Maybe 1 or 2 pharmacists would like to work with us for a year?
 - Handout with our contact details if interested.

- Any questions?