

Dr Jim Livingstone
Director of Safety, Quality and Standards



Department of
**Health, Social Services
and Public Safety**

www.dhsspsni.gov.uk

AN ROINN
**Sláinte, Seirbhísí Sóisialta
agus Sábháilteachta Poiblí**

MÁNNYSTRIE O
**Poustie, Resydènter Heisin
an Fowk Siccar**

Patient Safety Alert

Subject:

Safer Use Of Intravenous Gentamicin For Neonates

For action by:

Chief Executives, HSC Trusts for cascade to:

- *Medical Directors*
- *Directors of Pharmacy*
- *Directors of Nursing*

Chief Executive, HSC Board

Director of Commissioning, HSC Board

For Information to:

Chief Executive, Public Health Agency

Director of Public Health, Public Health Agency

Director of Nursing, Public Health Agency

Dir of Performance Management & Service Improvement, HSCB

Director of Integrated Primary Care Services HSCB

Assistant Director of Performance Management, HSC Board

Assistant Director, Pharmacy & Medicines Management, HSCB

Assistant Director, Primary Care, HSCB

Professor David Woolfson, Head of School of Pharmacy, QUB

Professor Linda Johnston, Head of Nursing & Midwifery, QUB

Professor Hugh McKenna, Head of Life & Health Sciences, UU

Dr Owen Barr, Head of School of Nursing, UU

Professor Paul McCarron, Head of School of Pharmacy, UU

Post Graduate Dean, NIMDTA

Staff Tutor of Nursing, Open University

Director, Safety Forum

Lead, NI Medicines Governance Team

NI Medicines Information Service

NI Centre for Pharmacy Learning and Development

Summary of Contents:

The purpose of this circular is to highlight the importance of safer use of intravenous gentamicin for neonates.

Enquiries:

Any enquiries about the content of this Circular should be addressed to:

Safety & Quality Unit

DHSSPS

Room D2.4

Castle Buildings

Stormont

BELFAST

BT4 3SQ

Tel: 028 9052 2239

qualityandsafety@dhsspsni.gov.uk

Circular Reference: HSC (SQSD)4/10

Date of Issue: 30 March 2010

Related documents

Superseded documents

N/A

Status of Contents:

For completion of actions and assurance templates by 30 March 2011

Implementation:

Immediate

SQSD material can be accessed on:

<http://www.dhsspsni.gov.uk/index/phealth/sqs.htm>

Working for a Healthier People

Chief Medical Officer Group



Dear colleagues

SAFER USE OF INTRAVENOUS GENTAMICIN FOR NEONATES

Gentamicin is a broad spectrum aminoglycoside antibiotic that is widely used as the first choice antibiotic for the treatment of neonatal infection. A number of incidents have been identified by the National Patient Safety Agency (NPSA) involving administration of gentamicin at the incorrect time, prescribing errors and issues relating to blood level monitoring.

The content of the attached circular at Annex A has been reviewed by relevant professional colleagues in the Department and approved for regional dissemination.

I would ask you to bring this to the attention of relevant practitioners and key health and social care staff within your organisation. They should consider the best practice for their setting and take appropriate steps to minimise the risks to patients.

I would also draw your attention to the attached 'assurance template' which is a means of recording the response from the Trusts and Board in circumstances where SQS Circulars require action to be taken by a given date.

Yours sincerely



Dr J F Livingstone
Director, Safety, Quality & Standards

SAFER USE OF INTRAVENOUS GENTAMICIN FOR NEONATES

Issue

1. Patient safety incidents have been reported involving administration of gentamicin at the incorrect time, prescribing errors and issues relating to blood level monitoring. Gentamicin is a broad spectrum aminoglycoside antibiotic that is widely used as the first choice antibiotic for the treatment of neonatal infection.

National Context

2. A National Patient Safety Agency (NPSA) telephone survey of 180 neonatal units in England carried out in 2007 indicated that 89 per cent (166) used gentamicin. Side effects of gentamicin administration can include vestibular and auditory damage, and nephrotoxicity. In addition, gentamicin has a narrow therapeutic range which necessitates its administration within an accurate timing regime, as well as regular monitoring of blood serum concentrations¹.
3. A review of neonatal medication incidents reported between April 2008 and April 2009 identified 507 patient safety incidents relating to the use of intravenous gentamicin – 15 per cent of all reported neonatal medication incidents.
4. Analysis of these incidents highlighted that in 36 per cent of cases (182 incidents) the reason for the incident related to administration of the medicine at the incorrect time. In 24 per cent (124 incidents) of cases there had been a prescribing error, and in 17 per cent (86 incidents) there were issues relating to gentamicin blood level monitoring. Ninety-six per cent (483) of incidents reported to the RLS resulted in no harm or low harm, and four per cent (23 incidents) were reported as causing moderate harm.
5. Ninety-six per cent (483) of incidents reported to the Reporting & Learning System (RLS) resulted in no harm or low harm, and four per cent (23 incidents) were reported as causing moderate harm. However, it should be noted that the incidence of long-term hearing or renal damage as a result of gentamicin toxicity may not be apparent until some time after discharge from the neonatal unit, and therefore may not be captured in incident reports.
6. NPSA/2010/PSA001: Safer Use of Intravenous Gentamicin for Neonates is available on: <http://www.nrls.npsa.nhs.uk/resources/?entryid45=66271>

¹ Paediatric Formulary Committee. *British National Formulary for Children 2009*. London: BMJ Publishing Group, Royal Pharmaceutical Society of Great Britain, and RCPCH Publications; 2009.

Local Context

7. All HSC organisations responsible for the provision of neonatal services should ensure that by **30 March 2011**:
- i. a local neonatal gentamicin protocol is available that clarifies the initial dose and frequency of administration, blood level monitoring requirements, and arrangements for subsequent dosing adjustments based on these blood levels;
 - ii. local policies and procedures are developed or revised to state that intravenous gentamicin should be administered to neonates using a care bundle¹ incorporating the following four elements:
 - When prescribing gentamicin, the 24-hour clock format should be used and the unused time slots in the prescription administration record blocked out at the time of prescribing to prevent wrong time dosing.
 - Interruptions during the preparation and administration of gentamicin should be minimised by the wearing of a disposable coloured apron by staff to indicate that they should not be disturbed.
 - A double-checking prompt should be used during the preparation and administration of gentamicin².
 - The prescribed dose of gentamicin should be given within one hour of the prescribed time.
 - iii. neonatal units implement this care bundle using small cycles of change with a sample group of patients³;
 - iv. compliance with the care bundle is measured daily for each patient in the sample group until full compliance for all patients receiving gentamicin is achieved;
 - v. all staff involved in the prescribing and administration of intravenous gentamicin are provided with training relating to its use. This should include education regarding the interpretation and management of gentamicin blood levels including actions to be taken in relation to dose or frequency following a blood level result⁴.

¹A care bundle is a number of evidence-based practices, generally three to five, relating to a disease or care process that when undertaken collectively and consistently for a particular patient group offers a structured way of improving the processes of care and patient outcomes

²Double-checking prompt is available to download as a word document from NPSA's supporting materials

³As outlined in the supporting tool 'A guide to help you implement the neonatal gentamicin care bundle

⁴Support for this is provided in the PowerPoint presentation and frequently asked questions of the supporting materials.

Action Required

8. You will wish to bring the contents of this document to the attention of staff, particularly those involved in governance and risk management within your organisation. Organisations need to be aware of this best practice circular in order to assist in complying with the Quality Standards for Health and Social Care –
 - i. Criteria 4.3(i) (the appropriate management of risk);
 - ii. Criteria 4.3(m) (identify training and development needs);
 - iii. Criterion 5.3.1(f)(viii) (ensuring safe practice in medicines management); and
 - iv. Criterion 5.3.3(f) (implementation of evidence-based practice through guidance, for example, NPSA guidance).
9. HSC Trusts should take immediate action to implement this Rapid Response Report as outlined in paragraph 7 above by **30 March 2011**. Trusts should provide assurance on this action to the HSC Board by completing **Section 2** of the attached template.
10. The HSC Board should complete **Section 1** of the attached assurance template and forward to the Department by **27 April 2011**.

SQS Circulars: Assurance Template for HSC Board and Trusts

Circular number: HSC (SQSD) 04/10 Safer Use of Intravenous Gentamicin for Neonates

For Implementation by: 30/03/2011

(Section 2 is to be completed by HSCT and forwarded to HSCB for consideration. Section 1 should then be completed by HSCB and forwarded to DHSSPS)

SECTION 1:

To: Director, Safety, Quality & Standards Directorate, DHSSPS

I note the response from the Trust and –

I can confirm that the HSC Board is content the action(s) taken referred to in Section 2 below, complies with the requirements of the above circular.

I can confirm that the HSC Board is monitoring compliance with the above circular and has requested that further action is taken as follows:

I confirm that the Chief Executive and designated senior manager have been advised of this response and are content that it should be submitted to the Department.

Response submitted by: _____ (Name & contact details of person submitting response) on behalf of HSC Board. Date: _____

SECTION 2:

To: Chief Executive, HSC Board

I can confirm that the required actions set out in the above circular have been implemented in full by the due date.

I can confirm that the actions in the above correspondence have been partially implemented by the due date. Work is ongoing in the following areas:

I can confirm that the organisation has been unable to implement any actions of the above circular for the following reasons:

I confirm that the Chief Executive and designated senior manager have been advised of this response and are content that it should be submitted to the HSC Board.

Response submitted by: _____ (Name & contact details of person submitting response) on behalf of _____ HSC Trust. Date: _____