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Poster 1

Infliximab biosimilar switching program overseen by specialist pharmacist saves money, realises investment and optimises therapy
St.Clair Jones A, Brighton and Sussex University Hospitals NHS Trust, Pharmacy, Brighton

Background
The parity of efficacy and safety of the biosimilar infliximab (IFX) has been demonstrated with data on switching still emerging. Specialist Gastroenterology pharmacists are ideally placed to manage medicines optimisation and therapeutic drug monitoring (TDM)\(^1\), overseeing the switch, realising considerable cost savings and income through negotiations with commissioners.

Methods
A payment per switched patient was negotiated with commissioners for reinvestment into the inflammatory bowel disease (IBD) service. Information was sent to each patient offering counselling with the pharmacist. Over 8 weeks all patients were switched from Remicade\(^\circ\) to Remsima\(^\circ\), IFX TDM and clinical parameters were recorded prior to the infusion of the first dose of biosimilar. 6 month later clinical parameters were remeasured and compared. The pharmacist reviewed all results and managed any therapy changes, if necessary with multidisciplinary team (MDT) review. Savings were recorded.

Results
A payment of £1250/patient was negotiated to fund the switch. 71 (60 CD, 11 UC) patients were switched realising an income of £88,750. 17 patients stopped IFX, 7 due to antibodies and 2 due to loss of response (LOR) and need for surgery, 8 patients were changed to alternatives by MDT review. 54 patients continued on IFX infusions without experiencing LOR in the following 6 months. TDM results were analysed by the pharmacist who initiated 14 dose adjustments preventing 28 clinic appointments.

<table>
<thead>
<tr>
<th>Number of patients (N=71)</th>
<th>yearly cost vs Remicade(^\circ)</th>
<th>yearly cost vs Remsima(^\circ)</th>
</tr>
</thead>
<tbody>
<tr>
<td>patients changed to Remsima</td>
<td>54</td>
<td>-£223,970</td>
</tr>
<tr>
<td>patients stopped treatment</td>
<td>9</td>
<td>-£80,490</td>
</tr>
<tr>
<td>patients changed to adalimumab</td>
<td>4</td>
<td>-£1,980</td>
</tr>
<tr>
<td>patients changed to golimumab</td>
<td>3</td>
<td>-£4,855</td>
</tr>
<tr>
<td>patients changed to vedolizumab</td>
<td>1</td>
<td>+£2,760</td>
</tr>
<tr>
<td>patients with dose reduced</td>
<td>6</td>
<td>-£15,230</td>
</tr>
<tr>
<td>patients with dose increased</td>
<td>8</td>
<td>+£20,310</td>
</tr>
<tr>
<td>charges for IFX and FCLP/savings OPA tests</td>
<td>71/28</td>
<td>+£4290</td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>-------</td>
<td>--------</td>
</tr>
<tr>
<td>Total costs</td>
<td>-£299,170</td>
<td>-£7,030</td>
</tr>
</tbody>
</table>

Table 1: Financial impact

**Conclusions**

Active management of treatment around the switch by the Specialist IBD pharmacist saves money, realises investment into the service, optimises therapy in a timely manner and reduces outpatient appointments.

IBD pharmacists are familiar with TDM, management of IBD patients and able to negotiate with commissioners directly.

**References:**


**Declarations:**

- Word Count: 295 (excl. table and reference)
- This abstract describes a novel model of service provision. Ethical approval not required as not original research.
- Abstract accepted at ECCO 2017, Barcelona
- The author has no conflict of interest to declare
Assessing How Therapeutic Drug Monitoring of Biologic Medicines Is Used to Review Therapy in the Management of Inflammatory Bowel Disease at Guy’s and St Thomas’ Trust

Aikaterini Karamouzi, MPharm 4th student at King’s College London

Introduction: According to recent evidence, the anti-TNF and drug antibody serum levels could be used to optimise the biologic treatment for IBD patients. In 2015, the South East London Area committee created guidelines defining how TDM could be used in practice. This project was an audit designed to evaluate the Guy’s and St Thomas’ Trust (GSTT) Therapeutic Drug Monitoring (TDM) service for patients receiving biologics for the management of Inflammatory Bowel Disease (IBD) and whether the trust was complying with the guidelines.

Methods: Retrospective data collection of patients being prescribed adalimumab or infliximab from April 2016 till September 2016. Data from September 2015 till October 2016 was collected using a newly constructed data collection form. No ethical approval was required as the data was collected through the hospital database was anonymous. The data was analysed using Office Excel.

Results: A total of 821 patients were due for TDM during the audited period. More than 80% of all patients had their levels measured. The hospital was less compliant in carrying out TDM in patients on adalimumab due to less frequent hospital visits. The majority of patients had TDM in the intervals suggested by the South East London guidelines or with a delay of 1 to 2 months. More than 85% of the patients had their TDM results reviewed by the GSTT IBD team and their treatments changed if subtherapeutic levels were detected. Although, a high percentage of patients on both adalimumab and infliximab continued treatment despite subtherapeutic levels being detected. All patients who developed anti-drug antibodies had a change in treatment.

Conclusion: The hospital compliance, could be considered satisfactory. However, it can be improved by hiring more specialised nurses and improving communication between the staff. This audit was successful but also helped evaluate whether the guidelines can be followed in the everyday practice. A change in TDM intervals can improve the effectiveness of use of biologics in IBD.
Poster 3

Medicines Optimisation in Patients with Heart Failure with Reduced Ejection Fraction in Primary and Secondary Care

Bodagh C¹, Thomson C², Savage M², Campbell G², McDiarmid A², Collings V²
¹King’s College London, Department of Pharmacy and Forensic Science, London
²Guy’s and St Thomas’ NHS Foundation Trust, St Thomas’ hospital, London

Background: Heart Failure is a syndrome characterised by an inability of the heart to maintain adequate blood flow to meet the body’s requirements¹. Angiotensin-Converting-Enzyme inhibitors (ACEi) and Beta-blockers (BB) reduce mortality and morbidity in patients with Heart Failure with Reduced Ejection Fraction (HF-REF).

Objective: To assess whether medicine optimisation occurred in patients with HF-REF at discharge from primary and secondary care.

Method: Retrospective data was collected for 74 patients admitted between January – March 2016 coded with HF-REF. Subsequently, 44 patients from Lambeth and Southwark were followed up over a 6-month period. Electronic patient records were used to obtain data. Ethics approval was not required as this was a service evaluation.

Results: On discharge from secondary care, 7.5% (n=5) were on the optimal percentage dose of ACEi and 10.4% (n=7) were on optimal dose of BB. The most common limitation to titration was chronic kidney disease. In primary care, 34.1% of patients were limited in titrations of both ACEi and BB. Mortality rates were 25.7% and 20.5% in secondary and primary care respectively. Readmission rates were 38.6%.

Conclusion: Medicines optimisation did not occur at discharge for all patients. Reasons for this are multi-factorial, but a key factor identified was co-morbidities, which limited dose increase while contributing to the severity of HF-REF². Another factor was poor communication between healthcare staff across primary and secondary care. Plans, such as a new in-patient model of working and virtual clinics, are set with a goal to reduce mortality rates and improve medicines optimisation for HF-REF patients.

References
Venous Thromboembolism (VTE): How does The North Middlesex University Hospital NHS Trust compare with NICE and RCOG?
Bhatti, A. North Middlesex University NHS Trust Hospital, London.
Davdi, S. University College London, London.

Introduction
It is estimated that around 25,000 to 32,000 deaths occur each year due to venous thromboembolisms (VTE). Obstetric patients are also at an increased VTE risk as thrombosis and thromboembolism are identified as the leading cause of direct maternal death. To reduce mortality and morbidity, patients must be assessed for their risk using a NICE or RCOG tool.

Objectives
1. 100% completion of the NICE VTE risk assessments for all patients.
2. 100% completion of the RCOG VTE risk assessment for all obstetric patients.
3. Assess adequate choice of thromboprophylaxis using NICE and RCOG guidelines.

Method
A sample number was calculated with a confidence level of 95%. To ensure significant data an average of 10 patients were sampled per ward from a total of 16 wards. Patients were assessed against the NICE or RCOG assessment tools. Ethics approval was not required as this audit did not involve anything beyond patients normal clinical management.

Results and Discussion
Out of the 150 sampled 7% of patients had a complete risk assessment on hospital admission, and 37% of patients had a complete risk assessments after 24 hours. From the obstetrics patients sampled, 62% were completed, with the majority of assessments taking place at the postpartum stage. This audit also highlighted 4% of patients were inappropriately prescribed thromboprophylaxis.

Conclusion
This audit highlighted patients NICE or RCOG VTE assessments were not carried out across the hospital to the expected standard. Not only must work be initiated on completing VTE assessments, but thromboprophylaxis must also be prescribed appropriately. Work now will start to establish a multidisciplinary approach to ensure VTE assessments are conducted Trust-wide.

References


An audit on the use of parenteral iron transfusion in pregnancy at North Middlesex University NHS Trust Hospital
Ibrahim I, Govind A, Bhatti A. North Middlesex University NHS Trust Hospital London

Introduction

Optimising haemoglobin (Hb) in pregnancy for women with iron deficiency anaemia (IDA) has been shown to reduce the risk of maternal mortality, peripartum blood loss and prematurity\(^1,2\). Parenteral iron is a safe, cost effective option for correcting iron deficit in patients who are not responding to or cannot take oral iron\(^1,2\). Despite the established data profile for parenteral iron therapy in pregnancy, it’s usage remains low\(^1,3\).

Objectives

1. To identify the number of obstetric patients prescribed and administered parenteral iron dextran (Cosmofer®)
2. To assess the effect of parenteral iron therapy on haemoglobin levels
3. To formulate recommendations that will help optimise haemoglobin

Method

All obstetrics and gynaecology patients who were supplied with parenteral iron from the period of June 2015-2016 was identified from the pharmacy dispensing system. Clinical notes of the patients were reviewed and an audit form was used to collate the data. Ethics approval was not required.

Results

16 patients were identified of which 8 were suitable. The highest increase in Hb was observed two weeks after administration.

Discussion

Patients who received parenteral iron within a week of delivery had lowest effect on Hb. The earlier the intervention the more favourable outcome on both the antenatal and postnatal Hb.

Conclusion

There is a huge lag between the time of diagnosis and the time of parenteral treatment. Systems should be put in place to recognise and treat earlier on, to obtain maximum benefits from its use.

References

2. UK Guidelines on the management of iron deficiency in pregnancy; British Committee for Standards in Haematology (July 2011)
The Medicine Support Service
Belben, H. South West Academic Health Science Network (SWAHSN), Exeter.

Introduction/Background/Context
Patients discharged from hospital are at greater risk of miscommunication about or unintended changes to their medicines (1). Community Pharmacists can help to improve patient safety after discharge, but there is no systematic referral system in place (2).

Objective
To inspire and support spread, adoption and implementation of an electronic referral to pharmacy scheme across the South West, creating a unified approach and sharing best practice to improve patient outcomes after hospital discharge.

Method
Ethics approval was not required for this project.

A scoping exercise established which Trusts, nationally, had referral systems in place and which IT platforms were in use. Visits were made to some of the hospitals and pharmacies to witness their processes and share learning.

Results
Collaboration with our seven acute NHS Trusts, three Local Pharmaceutical Committees, PharmOutcomes, and the National AHSN network has resulted in;

• One Trust successfully rolling out an electronic referral system across all wards
• One Trust carrying out a pilot on one ward with rollout planned later this year
• One Trust beginning their pilot in April
• Three Trusts preparing for pilots later this year
• SWAHSN hosting launch events bringing together all sectors of pharmacy
• Development of a SWAHSN Implementation Support Pack to share

Discussion/Conclusion
We have demonstrated success with system and behavioural change, by collaborative working with pharmacy teams across primary and secondary care, for the benefit of patients.

Six of the seven acute trusts in the South West will be using electronic referrals by the end of 2017.

Community Pharmacy is filling a gap in the patient pathway helping to improve patient outcomes, supporting medicines adherence and reducing medicines waste.

The SWAHSN Implementation Support Pack has inspired the development of a National AHSN Toolkit

References
Does apomorphine reduce the rate of hospital admissions for Parkinson's disease patients?

Umer H, Barts Health NHS Trust

**Background**

Parkinson's disease (PD) is one of the most common neurological diseases affecting 1% of individuals over the age of 65 [1]. The majority of patients start off with oral medicines, with dose escalation when needed. However, as the disease progresses into its final stages, different treatment options are called upon. There are three main options for end stage PD [2]. These are: deep brain stimulation, continuous infusion of levodopa/carbidopa intestinal gel, or subcutaneous injection or infusion of apomorphine [2]. Apomorphine is less invasive than the other two options and is therefore usually first line in advanced PD. This study will look at the effectiveness of apomorphine use in PD patients. Ethics approval was required and received.

**Objectives**

The main aim of this study is to assess whether apomorphine use in PD patients has reduced the rate of hospital admissions, duration of these admissions and outpatient clinic visits in PD patients.

**Methodology**

Data was collected from two years before the apomorphine was started to two years after, to allow an even comparison of data. The data was gathered from the electronic patient record (EPR) system using clinic letters and discharge summaries.

**Results**

Overall there was a 46.2% reduction in the number of hospital admissions which also coincided with a fall in the average duration of admissions. Although there was a decrease in outpatient clinic visits for the majority of patients, others attended the same number of appointments before and after the apomorphine.

**Conclusion**

Overall, apomorphine has successfully reduced the number of hospital admissions in PD patients. However, some patients experienced severe hallucinations which called for withdrawal of treatment. Nonetheless, others were happy to continue despite the side effects, as it meant keeping their PD symptoms controlled. Therefore, it is important to take into consideration the risk to benefit ratio.

**References**


Introduction
The Health Board had seen a tripling of the number of out-patient prescriptions items over the last decade. An electronic prescribing system for hospital out-patients' prescriptions was introduced in a children’s clinic in October 2014. It aimed to reduce inappropriate expenditure and to improve the quality of prescribing.

Objective
The objectives were to evaluate whether a change in expenditure had occurred and to identify patient/carer and staff opinions on the new system.

Method
Ethical approval by Cardiff University and Research and Development approval by the Health Board was granted. Expenditure data for 6 months pre (2014) and post (2015) implementation of electronic prescribing were analysed using Excel®. Semi-structured interviews with doctors and patients/carers were conducted. They were transcribed verbatim and thematically analysed.

Results
The total cost of the 6 months prescriptions in 2014 and 2015 was £72830 vs £72125 respectively. The cost per patient was £62 vs £53 (2014 vs 2015) and the cost per item was £49 vs £40 (2014 vs 2015). No changes to prescribing patterns, patents or patient profiles were identified. Three doctors and 7 carers were interviewed. The doctors felt the new system allowed them to see all the patients’ history/medication details quickly, and medicines prescribed by other hospital teams. It aids adhering to the formulary, is easier and quicker to use and ensures important details are not missed off the prescription. Doctors now have awareness of the cost of medicines. Carers felt the prescriptions were more professional in appearance.

Discussion
This study demonstrated the new system reduced the cost per patient and per item; against the increase in the number of prescriptions being written. End-users were extremely positive about the impact the system has had on the quality and safety of prescribing.
Self-administration of medicines (SAM) programme allows patients to administer their medicines by themselves. SAM is believed having value in improving patients’ knowledge about medicines and having more engagement with patient\(^1\). This is the first study of audit SAM programme in cardiovascular wards.

**Objective (s)**

The objectives were to conduct an audit of SAM standards and to identify associations between patient’s characteristics and preference for medicines administration. SAM standards are 100% patients are offered the programme, 100% of both informed consent and assessment form are documented, and 100% medicines are stored and labeled properly.

**Method**

A six-week prospective study was carried out in five cardiovascular wards. A convenience sampling was chosen with verbal consents for interviews. Data collection tools were developed based on the standards set by the Trust Policy. The association of patients’ preference was assessed using a Mann-Whitney, Kruskal-Wallis and Chi-Square tests (significance level, p<0.05). As this study is an audit, ethics approval was not required.

**Results**

422 patients were included in this study. 22% patients self-administered their medicines. The findings are unsatisfactory since all wards did not achieve the targets’ percentage. 17 (4%) patients were offered self-administration. The percentage in proper documentation and self-administration practice was 11% and 20% respectively. 43% patients indicated a preference to self-administer. This finding is similar with what the other study found, however, this study further analysed patient’s preference\(^2\). See Table 1. All patients in SAM programme knew what they were taking.
Table 1. Association between patient’s characteristics and preferences

<table>
<thead>
<tr>
<th>Variables</th>
<th>Self-administration preference (43%)</th>
<th>Nurse-administration preference (57%)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median age (range)</td>
<td>64(16-91)</td>
<td>69(16-95)</td>
<td>0.001</td>
</tr>
<tr>
<td>Gender</td>
<td>Male:99(59%) Female:68(41%)</td>
<td>Male:151(69%) Female:69(31%)</td>
<td>0.057</td>
</tr>
<tr>
<td>Length of stay (LOS)</td>
<td>≤48 hours:41(25%) &gt;48 hours:126(75%)</td>
<td>≤48 hours:25(11%) &gt;48 hours:195(89%)</td>
<td>0.001</td>
</tr>
<tr>
<td>Median number of medicines (range)</td>
<td>7 (1-18)</td>
<td>8 (1-25)</td>
<td>0.009</td>
</tr>
</tbody>
</table>

Discussion/Conclusion

This audit showed that the targets were far from being achieved. This is mainly due to lack of awareness of the policy. This study also showed that some patients were interested in being independent in managing their medicines whilst inpatient. Further study could be carried out to identify patients’ and healthcare professionals’ perspectives regarding barriers to implement this programme.

References

Poster 10
The benefits of a Parkinson's Disease Specialist Pharmacist (PDSP) in the Care of Inpatient Parkinson's Disease (PD) patients.
Hindmarsh, S, Pharmacy Department, City Hospitals Sunderland NHS Foundation Trust (CHS), Sunderland.

Introduction:
Medicines management (MM) for Parkinson's disease (PD) is complex; requiring accurate and timely prescribing and administration of multiple critical medications\textsuperscript{(1)}. Incorrect management can be detrimental; increasing health care costs and reducing patients' quality of life and experience of inpatient care \textsuperscript{(1)}.

Baseline audits revealed multiple inadequacies in the MM of PD; refer to table one.

Table 1: Evaluation of the safe and effective prescribing and administration of medications for the motor control of Parkinsonism \textsuperscript{(2,3)}.

<table>
<thead>
<tr>
<th>Result for patients (n = 79) with Parkinsonism</th>
<th>December 2014 – February 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacy medicines reconciliation (MR) in &lt; 24 hours (%)</td>
<td>57 (n = 44)</td>
</tr>
<tr>
<td>Longest time to MR</td>
<td>8 days, 5 hours and 2 minutes</td>
</tr>
<tr>
<td>Patients with a correct prescription for motor control on admission to hospital (%)</td>
<td>42 (n = 33)</td>
</tr>
<tr>
<td>Most common prescription error</td>
<td>Prescription timing</td>
</tr>
<tr>
<td>Time to prescription correction</td>
<td>2 days and 5 minutes</td>
</tr>
<tr>
<td>Percent of patients given all medications on time for motor control during inpatient admission (%)</td>
<td>9 (n = 7)</td>
</tr>
<tr>
<td>Percentage of doses being given on time (%)</td>
<td>54 (n = 3734)</td>
</tr>
<tr>
<td>Main reason for unintentionally omitted doses</td>
<td>Delayed inpatient prescriptions</td>
</tr>
<tr>
<td>Patients who had one or more doses unintentionally omitted within 24 hours (%)</td>
<td>30 (n = 24)</td>
</tr>
<tr>
<td>Patients who had one or more doses unintentionally omitted 24 hours post admission (%)</td>
<td>37 (n = 29)</td>
</tr>
</tbody>
</table>

To support this, a 0.5 work time equivalent (WTE) PDSP was recruited to the PD team.

Objective(s):
To quantify the impact of the PDSP on:
- MR within 24 hours of admission for all patients with Parkinsonism
- Interventions conducted to correct erroneous prescribing and improve administration of anti-parkinsonian medications for PD patients
- Medications for motor control that were administered on time for PD patients

To review whether PD patients would value a PDSP in their inpatient care.
Methods:

Data was collected retrospectively from the electronic prescribing system, between January and March 2016. Additionally, a patient survey was sent to all PD patients whom were reviewed in the PDSP’s outpatient clinic.

Results:

Pharmacist led MR (n = 72) within 24 hours rose significantly to 96%, with the average time to MR being substantially reduced to 11 hours and 37 minutes (range 0 - 39 hours).

The PDSP conducted 197 various interventions for 50 in-patients with an average of four interventions per patient; only three patients required no intervention. Overall, this led to considerably more doses of medicines for motor control (75%) being administered on time.

Patient feedback (19 respondents) revealed that 100% of patients would value a PDSP being involved with their inpatient care.

Discussion and conclusion:

It is clear that recruiting a PDSP to the CHS PD team, significantly improved safe and effective MM for PD patients. Ultimately this will improve patient experience and clinical outcomes. Moreover, patients wish for a PDSP to be involved in their inpatient care.

Statements:

Clinical governance department confirmed that ethical approval was not required.

References:

1. https://www.parkinsons.org.uk/content/get-it-time (last accessed 20/01/17)
2. Porter, R (2015). Safe and effective administration of medications for the motor control of Parkinsonism, City Hospitals Sunderland
Optimisation of anticoagulant therapy in atrial fibrillation
Gregory, T. NHS North Somerset Clinical Commissioning Group, Clevedon

Introduction/Background/Context

Atrial fibrillation (AF) is a major risk factor for stroke[1]. This review builds on the WEAHSN “don’t wait to anticoagulate” project[2], as well as previous work in North Somerset CCG (NSCCG) which reviewed the coding of AF and the use of anticoagulants.

Ethics approval was not required.

Objectives

1. To identify patients who do not have a CHA₂DS₂-VASc score, or whose score has not been reviewed in the last year
2. To identify patients with a CHA₂DS₂-VASc score of ≥2 (≥1 in men) who are not currently anticoagulated
3. To ensure that time in therapeutic range (TTR) was reviewed in patients on warfarin[4]

Method

EMIS Web search and report.

Results

The number of patients with a CHA₂DS₂-VASc score increased by 45%, from 2282 to 3299. 231 patients were initiated on anticoagulation; 94% of patients with CHA₂DS₂-VASc >2 are now anticoagulated (adjusted for unsuitable patients, e.g. high bleeding risk, palliative care)

237 patients with TTR <65% were identified and reviewed. 22% had modifiable risk factors to improve compliance, anticoagulation was stopped altogether in 11% of patients and an alternative anticoagulant prescribed in 11% of patients.

Discussion/Conclusion

A greater number of patients are now appropriately anticoagulated. Previous work has shown that stroke rates decrease with increasing anticoagulation (taking into account bleeding risk).

Review of the TTR in patients on warfarin is essential if it is to be effective in preventing strokes. Modification of risk factors associated with low TTR can improve this, and alternative anticoagulants are not always necessary; practice and community pharmacists are ideally placed to work with patients to address these.

It is estimated that between four and fourteen strokes were prevented as a result of this review (based on CHA₂DS₂-VASc scores and risk), with an average saving of between £48,000 and £168,000 (based on a first-year cost of treating a stroke of £12,000, excluding social care costs).

References


Medicines Optimisation for Heart Failure Patients in Primary and Secondary Care

Tahar Z1, Yerbury P2, Decourcey J2, Piper S2, Thomson C3, Collings V1, 3

1 King’s College London, Department of Pharmacy and Forensic Science, London,
2 King’s College Hospital, Department of Pharmacy, London
3 Guys and St Thomas’ NHS Foundation Trust, Department of Pharmacy, London

Background:
Heart failure is associated with high mortality and is a major cause of hospitalisation. The goals of pharmacological treatment are to control disease progression and improve quality of life. The three key drug classes that have shown to improve survival and are recommended for the treatment of every HF patient with reduced ejection fraction are ACE inhibitors (ACEi), beta blockers (BB) and mineralocorticoid receptor antagonists (MRA) [1]. HF management including drug therapy titration is crucial in preventing hospital readmissions. The aim of this study is to determine the extent of medicines optimisation in primary and secondary care and the factors affecting this.

Methods:
An audit was carried out for all patients with an admission to hospital between January and March 2016 for which ethics approval was not required. The first part collected data on secondary care information. The second part focussed on patient follow up post-discharge including appointments and medication changes within six months.

Results:
Fewer than 40% of patients were prescribed all three key medications on discharge (ACEi, BB and MRA). Initiations of these drugs were shown when comparing treatments on admission to discharge, indicating effective use of HF guidelines especially for those newly diagnosed. However, low prescribing rates for MRA were indicated overall (42%). During follow up, only 14% of patients were seen within 2 weeks of discharge and a third of all patients also had a readmission. Approximately 25% of patients were optimised after six months.

Conclusion:
The main factors shown to increase medicines optimisation are specialist input and efficient follow up post-discharge. There is scope for implementation of a patient pathway to enhance patient outcomes and reduce readmissions; more effective cooperation between primary and secondary care is needed as well as interventions to aid the GP when needing to make prescribing decisions.

References:
1. Piotr Ponikowski et al. ‘European Society of Cardiology guidelines for the diagnosis and treatment of acute and chronic heart failure’- *European Heart journal 2016, 37, Chapter 7 (Pharmacological treatment of heart failure with reduced ejection fraction) pg 2173*
Poster 13
Review of the diagnosis and management of patients with chronic obstructive pulmonary disease (COPD)
Tom Gregory, Medicines Optimisation Pharmacist, NHS North Somerset CCG

Introduction/Background/Context

The management of COPD is no longer based solely on lung function and spirometry, but respiratory symptoms and past exacerbations, as reported by the patient and assessed using mMRC and CAT scores\(^{(1)}\). These are categorised into GOLD ABCD groups, which informs pharmacological management\(^{(2)}\).

Ethics approval was not required.

Objectives

- Identify potentially undiagnosed COPD patients
- Review existing patients to ensure that triple therapy (ICS/LABA/LAMA) is appropriate and, if not, step down suitable patients\(^{(3)}\)
- Ensure accurate coding of exacerbations, admissions, mMRC/CAT scores\(^{(4)}\)
- Review provision of Pulmonary Rehabilitation (PR), identify patients who may benefit, and ensure consistent coding\(^{(5)}\)

Method

EMIS Web search and report

Results

694 patients were identified as at risk of COPD and reviewed. 100 (15%) were diagnosed with COPD.

Spirometry and chest X-ray are required to confirm COPD; these were performed in 23% and 21% of patients reviewed.

92% of patients diagnosed were prescribed inhalers in accordance with local BNSSG guidelines for COPD. 9% of patients received a diagnosis of Asthma-COPD overlap syndrome (ACOS).

546 current COPD patients were reviewed.

15% of the patients reviewed were stepped down from ICS/LABA in accordance with local guidelines.

Discussion/Conclusion

Areas for improvement have been highlighted to practices, including investigations to confirm COPD, and improving coding and provision (and attendance) of PR.

ACOS is a relatively newly identified condition; at the time of this review, there was not a READ code for ACOS, however this is now available.

This review has highlighted areas for improvement in the templates which are used to structure reviews for COPD, in particular to include mMRC, prompts for consideration of PR and stepdown of appropriate patients.
This review has led to the development of local structured stepdown guidelines for patients on inappropriate triple therapy.

References


Enhanced atrial fibrillation medicines use reviews (AF MURs) using innovative technology to improve the identification and treatment of atrial fibrillation.
Khanbhai, Z, Royal Brompton and Harefield NHS Foundation Trust, Middlesex.

Introduction

The prevalence of atrial fibrillation (AF) in the UK is around 2%, affecting more than 10% of people aged over 80 years. AF is associated with a high risk of stroke. Early identification and evidence based management of AF results in the reduction in incidence of stroke (1,2). Community pharmacists are ideally situated to facilitate the screening and diagnosis of AF (3).

Objective

To determine the feasibility of a community pharmacist led AF screening program to:
1. Improve the detection and treatment of AF.
2. Facilitate early referral to a specialist tertiary centre.

Method:

Ten community pharmacists were trained to undertake screening of AF. Participants included those aged 65 years and above with AF associated risk factors. Screening involved using an innovative handheld electrocardiograph (ECG) device, Kardia monitor and completing a specially designed AF MUR. Patients were referred to a specialist arrhythmia clinic if they had possible AF detected on their ECG, the ECG could not be interpreted or the patient had AF but was not anticoagulated.

Results:

Over 6 months a total of 592 patients were enrolled. Table 1 describes patient demographics and AF associated risk factors:

Table 1: Patient demographics and risk factors.

<table>
<thead>
<tr>
<th>Patient demographics</th>
<th>(n = 592)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(data collection phase May – October 2016)</td>
<td></td>
</tr>
<tr>
<td>Male (n, %)</td>
<td>305 (51.5)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>75 ± 6.9</td>
</tr>
<tr>
<td>Risk Factors (n, %)</td>
<td></td>
</tr>
<tr>
<td>Vascular disease</td>
<td>88 (14.9)</td>
</tr>
<tr>
<td>Congestive Heart Failure</td>
<td>5 (0.8)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>506 (88.5)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>145 (24.4)</td>
</tr>
<tr>
<td>Previous history of stroke/transient ischaemic attack/thromboembolism</td>
<td>34 (5.7)</td>
</tr>
<tr>
<td>Previous AF diagnosis</td>
<td>49 (8.3)</td>
</tr>
</tbody>
</table>
Of the 592 patients' ECGs 476 were normal, 54 had possible AF, 62 were unable to be interpreted. Of the 54 patients with possible AF, 21 were suitable for referral. Of these 21, 15 patients have subsequently been diagnosed with AF and offered anticoagulation. 60% of patients were seen within 2 weeks of referral.

**Conclusion:**

This study demonstrates that improved diagnosis and treatment of AF in a multi-disciplinary and collaborative way across the primary/secondary care interface utilising innovative technology is possible and requires further exploration.

**References:**


Ethics approval was not required as this is The Health Foundation funded research project regarding provision of a new innovative service.
Review of the management and treatment optimisation of patients with gout

Gregory, T. NHS North Somerset Clinical Commissioning Group, Clevedon

Introduction/Background/Context

Gout is a relatively common condition, with an incidence of approximately 1.4% nationally; North Somerset data shows a prevalence of nearly 3%.

Uricosuric drugs (e.g. allopurinol) should be titrated to achieve a serum uric acid (SUA) of <0.3mmol/L. Regular monitoring of renal function is mandated during titration; both SUA and renal function then require annual monitoring.

Ethics approval was not required.

Objectives

1. Review the management of patients with gout, in particular monitoring and titrating uricosuric drugs according to serum uric acid level and renal function.
2. Review the provision of lifestyle advice to minimise the impact of gout
3. Assess compliance with NICE TA164 (febuxostat).

Method

EMIS Web search and report

Results

48% of patients with gout have experienced an acute attack of gout within the last five years.

36% of patients had recorded serum uric acid levels in the last 12 months. 44% did not have results within the last two years.

The majority of patients did not have any recorded lifestyle interventions by a healthcare professional recorded.

All patients prescribed febuxostat were prescribed it in accordance with NICE TA164.

There were 52 patients identified as taking a medicine known to cause or exacerbate gout, such as a thiazide diuretic, 19 were identified who required further medication review.

Discussion/Conclusion

Monitoring of renal function and titration of uricosuric drugs to uric acid level is an area for improvement. This is an area where practice and community pharmacists can be involved to optimise treatment.

Modifiable risk factors, e.g. weight, alcohol intake and smoking status should be discussed and recorded, and concurrent medicines reviewed to ensure contributory factors are addressed, such as diuretics.

Searches to identify patients who require monitoring have been made available on the CCG “dashboard” in EMIS.
References


Assessing benefits of a medicines management pharmacy technician on ward based services

Author: Amelia Chowdhury, Barts Health NHS Trust, London

Introduction

We report an assessment of the role of a patient facing medicines management pharmacy technician workforce and the impact it has on operational activities at ward level. In line with Lord Carter’s review and recommendations the approach to daily tasks focused on the right role for the right person and assessing the benefits to patients and service.

Objective

To realign the traditional model of dispensing within an inpatient pharmacy by instilling ward based dispensaries to facilitate prompt discharge of patients. To support the medicines reconciliation on admission to hospital and the contributions to care a pharmacy technician can make.

Method

Data collection undertaken over 7 days recording the number of medicines reconciliations undertaken by pharmacy technicians, the number of items requiring supply at the point of discharge and the average turn-around time for supply to be made to complete a discharge prescription.

Results

The pharmacy technicians made a significant impact on the turnaround time of the medicines to supply at discharge, preparing the majority in advance at ward level. They have a significant impact on the contributions to patient care from admission to discharge as well as supporting an efficient way of working within the pharmacy team.

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of medicines reconciliations completed by a pharmacy technician within 24 hours of admission</td>
<td>100%</td>
</tr>
<tr>
<td>Average number of items supplied at point of discharge</td>
<td>2</td>
</tr>
<tr>
<td>Average time taken for completion of TTA</td>
<td>11mins</td>
</tr>
<tr>
<td>Average Number of contributions made on average by a pharmacy technician on 1 day</td>
<td>8</td>
</tr>
</tbody>
</table>

Conclusion

Delays in supply at discharge have been dramatically reduced through implementation of ward based dispensing. Better utilisation of the technician team has seen other improvements including raising the profile of the pharmacy team at ward level, improved availability to undertake discharge medication counselling and medicines reconciliation. Pharmacy technicians are a key member of medicines management at ward level and help co-ordinate day to day workflow of medicines management duties and supply.

References

1. Operational productivity and performance in English NHS acute hospitals: Unwarranted variations An independent report for the Department of Health by Lord Carter of Coles
To Evaluate Preoperative Prescribing of Surgical Antimicrobial Prophylaxis at Croydon University Hospital
Royce Rajan, Helen McGowan, On Yee Wong, Croydon University Hospital

Background

NICE recommends antibiotic prophylaxis in clean, clean-contaminated, and contaminated surgery to prevent surgical site infection (SSI) (1). SSI develops from contamination at incision site with microorganisms on the patient which penetrate the wound. Prudent prescribing using hospital (CUH) guidelines (2012) and antimicrobial stewardship can reduce SSI-related admissions and NHS burden. This study did not require ethics approval.

Objectives

Aim – Examine preoperative antimicrobials choice for surgical prophylaxis at CUH.

Objectives – derived from Public Health England (2). Find out what percentage of patients:

- with indication for preoperative prophylaxis per guidelines are prescribed antimicrobials;
- are administered the appropriate antibiotic per guidelines;
- are administered multiple intraoperative antimicrobial doses;
- screened MRSA-positive are decolonised prior to surgery and given appropriate choice.

Standards – 100% of all adult patients:

- are administered a single-dose of antibiotic(s), if prophylaxis indicated;
- will receive the appropriate choice of antibiotic for preoperative prophylaxis as consulted with guidelines;
- only receive intraoperative multiple-doses indicated in prolonged procedure;
- who are MRSA-positive are decolonised, and receive appropriate prophylaxis that provides MRSA cover.

Children and weekend surgery are excluded.

Method

Pilot study identified the benefit of collecting data retrospectively, and to include “allergies” in the Processing Form. Surgical patients were collated between 5th and 9th December 2016 by the informatics pharmacist. The senior and pre-registration pharmacists accessed notes to record details in the data collection form. Microsoft Excel was used as the statistical software package to analyse data.

Results

85% of operations were administered with single-dose of antibiotic where indicated and 61% of operations was compliant with choice to trust guidelines (Figure 1).
Conclusions

61 operations were omitted as guidelines did not include them; 41 out of 67 operations were compliant to guidelines; audit standards are not met. Three operations were undertreated which increases patient risk to develop SSIs. Nine operations were administered alternative-therapy inappropriately (reserved for penicillin-allergy). Procedures like ERPC, follow national recommendations however, deviations are not recorded correctly.

There were no intraoperative multiple-doses, or MRSA-positive patients therefore the audit is unable to determine if these standards are met.

Future work should focus on reauditing after guideline update.

Action Plan - Update CUH guidelines to reflect current recommendations; educate surgical teams about the use of trust guidelines; make guidelines conveniently accessible from the intranet; improve recording any deviations correctly; reaudit in 6 months.

References

1. NICE - Surgical Site Infections: Prevention and Treatment. (CG74) (2008)

Poster 18

Utilising clinical systems to improve antibiotic prescribing in primary care
Kennedy H, Dorset Clinical Commissioning Group, Dorset

Introduction
Antibiotic prescribing within the clinical commissioning group (CCG) is below national and regional levels (Table 1), however, the medicines management team (MMT) recognised the need for further, continuous improvement and utilised the Royal College of General Practitioners acute cough audit1 as part of the Improvement Plan 2016/2017.

Based on previous feedback, and in line with the NHS England GP Forward View,2 the MMT also acknowledged the need for prescribing audits to be streamlined.

Objectives
The objectives were to reduce inappropriate prescribing of antibiotics and the administrative burden on GPs completing the audit.

Method
Through engagement with relevant stakeholders a clinical system template was developed to support the recording of relevant information for the acute cough audit at the time of consultation as well as providing guidance on the appropriateness of prescribing. Searches and guidance were also written and shared with practices enabling the majority of questions to be completed by non-clinical staff members.

Ethics approval was not required because this was an audit project.

Results
By the end of March 2017, quantitative data will be available through analysis of the results; qualitative data will be gathered through surveys. Analysis of prescribing data has shown a 2.73% reduction in antibiotic items during the audit period, which is greater than that seen nationally or by the Local Area Team (Table 1).

<table>
<thead>
<tr>
<th>Table 1 Antibiotic Items per 1000 ASTRO PU:</th>
</tr>
</thead>
<tbody>
<tr>
<td>CCG Items Per 1000 Item Based ASTRO PU</td>
</tr>
<tr>
<td>September to November 16</td>
</tr>
<tr>
<td>September to November 15</td>
</tr>
<tr>
<td>% change</td>
</tr>
</tbody>
</table>

Discussion
Feedback has been positive, lead prescribing GPs have noted that introducing technology in conjunction with effective education of all users has the potential to reduce inappropriate prescribing of antibiotics.

The process has led to improved collaborative working between GPs and the MMT who are now working together on the 2017-18 audits.

References
Identification of risk (prognostic) factors for medication related problems (MRPs) occurring during hospital admission: a survey of healthcare professionals and patient/public representatives
C. Geeson\textsuperscript{a,b}, B.D. Franklin\textsuperscript{b}, L. Wei\textsuperscript{a}

\textsuperscript{a} Luton and Dunstable University Hospital, Luton
\textsuperscript{b} UCL School of Pharmacy, London

Introduction/Background/Context
There is a growing need to target hospital clinical pharmacy services, resulting in a call for the development of clinical pharmacy prioritisation tools\textsuperscript{1}.

Objective
To obtain opinion on the potential prognostic factors (PFs) that cause medication related problems (MRPs) during hospitalisation.

Method
Potential PFs were identified from published literature, and an internet survey developed to identify: (1) their perceived importance/clinical relevance; (2) other potential PFs.

The survey was administered during April-June 2016. The target subjects comprised healthcare professionals and patient/public representatives. Invitations to participate were shared through local and national forums, and emailed to local healthcare professionals, academics, and patient/public representatives, with respondents requested to share the survey within their organisations.

Respondents rated each PF using 5 Likert options (see table). The median and interquartile range were calculated for each PF to establish central tendency/variability.

This is part of a larger study to develop a prognostic model, (the Medicines Optimisation Assessment Tool/MOAT), to identify patients at highest risk of MRPs (NHS REC approval 16/WA/0016).

Results
A total of 247 responses were received (73.4\% pharmacists, 13.1\% doctors, 4.2\% nurses, and 3.4\% patient/public representatives).

Table 1 provides a summary of the perceived importance/clinical relevance of the PFs.
Table 1 Categorisation of the perceived importance of the proposed PFs as determined by the median response

<table>
<thead>
<tr>
<th>Prognostic factor</th>
<th>Median response</th>
<th>Interquartile range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Renal function</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Liver function</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Age</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Co-morbidities</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Allergies</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Swallowing problems</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Number of medicines prescribed</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Number of potentially inappropriate medicines prescribed</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Type of medicine prescribed</td>
<td>1.5</td>
<td>1</td>
</tr>
<tr>
<td>Serum sodium level</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Serum potassium level</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Platelet count</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Serum albumin level</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>White blood cell count</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Diagnosis/reason for admission</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Type of hospital department/speciality</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Readmission to hospital within 30 days</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Number of hospital admissions within 6 months</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Elective vs. planned admission</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Route of administration of medication</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Dosing frequency of medication</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Social deprivation</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Dependent living situation</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Hyperlipidaemia</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Number of outpatient appointments within 6 months</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Gender</td>
<td>4</td>
<td>1</td>
</tr>
</tbody>
</table>

* Likert responses allocated ordinal numbers, 1= very important, 2=important, 3=50:50, 4=less important, 5=not important

Fifty nine additional PFs were suggested, including dementia (34 participants); adherence/compliance (17); physical/sensory impairment (14); compliance aid (11); frailty (10); language barrier (9).

Discussion/Conclusion

The study found that the majority of PFs (23/27) were considered ‘important’ or ‘very important’, with a significant number of additional PFs (59) suggested, demonstrating the multidimensional causality of MRPs.

This study enables healthcare professional and patient/public opinion to guide development of the MOAT, thereby increasing its clinical credibility. It also has the potential to inform the development of other clinical pharmacy prioritisation tools. However, limitations include the use of convenience sampling, use of an “infinite” target population, and the potential impact of volunteer bias.

References

1. NHS England, Transformation of seven day clinical pharmacy services in acute hospitals, September 2016