وزارة الصحة
Ministry of Health

PHARMACY NEWSLETTER

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A quarterly e-newsletter of the General Administration of Pharmaceutical Care, Therapeutic Affairs Deputyship

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1.1 Formulary New Additions

-Sulfamethoxazole 266.7 mg + trimethoprim 53.3 mg injection: concentrated, 3ml ampoule

-Povidone iodine 5% preservative free eye drops

-Dexamethasone,neomycin sulfate ear drop

-White petrolatum,mineral oil eye ointment

- Dexamethsone 0.1%(1 mg/mL) + tobramycin 0.3%(3 mg/mL) eye/ear drops

-Milrinine 1 mg/ml ampule

-Baricitinib tablet 4 mg (Olumiant®)
Therapeutic classification: Antirheumatic, Tyrosine Kinase Inhibitor.
Approved indications for severe Alopecia Aerate.
Privilege of prescribing; restricted to consultant dermatol- ogy central medication under value based healtcare (registry)

-Ravulizumab 10 mg/mL injection: intravenous infusion, 30 mL vial (Ultomiris®)
Therapeutic classification: Blood Modifier Agent, Monoclonal Antibody.
Approved indications for treating Paroxysmal Nocturnal Hemoglo- binuria in adults and pediatric with hemolysis,with clinical symptoms suggesting high disease activity, or whose disease is clinically stable after having Eculizumab for at least 6 months.
Privilege of prescribing; restricted to consultant hematolo- gists (adult and pediatric) central medication under value based healtcare (registry)

-Pegcetacoplan 54 mg/mL SubQ injection: concentrated, 20 mL vial (Empaveli®)
Therapeutic classification: Blood Modifier Agent.
Approved indications for treating Paroxysmal Nocturnal Hemoglo- binuria (PNH) in adults,who have Anemia after at least 3 months of treatment with a C5 inhibitor.
Privilege of prescribing; restricted to adult hematology consultant

1.2 Formulary Deletions

Deletion is effective when the stock reaches zero (DWZ):
-Eculizumab Injection 300 mg/30 mL (Soliris®)
Therapeutic classification: Blood Modifier Agent, Monoclonal Antibody

-Antihemophilic factor viii (recombinant,long acting) powder for sol inj. 1000iu vial.

-Sulfamethoxazole 400 mg/5 ml + trimethoprim 80 mg/5 ml injection: concentrated, 5 ml ampoule

-Povidone iodine 0.02% preservative free eye drops

-Aminoacridine hydrochloride 0.1% (1 mg/ml) + benzocaine 2% (20 mg/ml) + hydrocortisone 0.02% (200 microgram/ml) + neomy- cin sulfate 0 .25% (2.5 mg/ml) + polymyxin b sulfate 0.1% (1 mg/ml) ear drops

-Dexamethasone 0.1% eye ointment

-Paraffin (1 g/g) eye ointment , 3.5 g tube

-Betamethasone 0.1% (1 mg/ml) + gentamicin 0.3% (3 mg/ml) eye/ear drops

-Aminocaproic acid 5 g/20 ml injection: concentrated 20 ml vial

-Bretylium tosylate 50 mg/ml injection, 10 ml ampoule

-Chloramphenicol (as palmitate) 125 mg/5 ml oral liquid

-Cyproheptadine hydrochloride 2 mg/5 ml oral liquid

-Didanosine 125 mg modified release capsule

-Etamsylate 125 mg/ml injection 2 ml

-Interferon alfa-2a 3 million international units/0.5 ml injection, 0.5 ml vial

-Interferon alfa-2a 4.5 million international units/0.5 ml injection, 0.5 ml vial

-Methylergometrine maleate 0.125 mg tablet

-Piperacillin 2 g powder for injection parenteral

-Pyrimethamine 25 mg + sulfadoxine 500 mg tablet

-Rimexolone 1% eye drops

-Cantharidin 0.7 % topical application

-Doxycycline 20 mg tablet oral

-Peginterferon alfa-2b 100 mcg powder for injection 0.5 ml

-Physostigmine salicylate 2 mg/ml injection, 1-2 ml

-Spectinomycin 2 g powder for injection, vial + diluent

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-Cromoglycate sodium 2 % spray nasal

-Amrinone 100 mg/20 ml injection, 20 ml vial

-Aluminium hydroxide 400 mg capsule

- Crizanlizumab 10 mg/mL injection, 10 mL vial

-Rituximab (Mabthera) 100 mg/10 mL injection: concentrated, 10 mL vial

-Rituximab (Mabthera)500 mg/50 mL injection: concentrated, 50 mL vial

-Coagulation factor VIII (recombinant) 1000 international units injection: powder for, vial + diluent

-Coagulation factor VIII (recombinant) 250 international units injection: powder for, vial + diluent

-Coagulation factor IX (recombinant/reconstituted) 500 international units injection: powder for,10 mL vial

-Coagulation factor IX (recombinant/reconstituted) 250 international units injection: powder for,10 mL vial

1.3 Removed From Central Medication List

- Azacitidine 100 mg injection: powder for vial

-Bevacizumab 100 mg/4 ml (zirabev®) preservative free injection: concentrated, 4 ml vial

-Bevacizumab 400 mg/16 ml (zirabev®) preservative free injection: concentrated, 16 ml vial

-Bosentan 125 mg tablet

-Bosentan 62.5 mg tablet

-Caspofungin 50 mg infusion: powder for vial

-Cladribine 10 mg/10 ml preservative free injection, 10 ml vial

-Dimethyl fumarate (sclera) 120 mg capsule: gastro resistant

-Dimethyl fumarate (sclera) 240 mg capsule: gastro resistant

-Docetaxel 20 mg/2 ml injection: concentrated, 2 ml vial

-Docetaxel 80 mg/8 ml injection: concentrated, 8 ml vial

-Exemestane 25 mg tablet

-Ferric carboxymaltose 500 mg/10 ml injection, 10 ml vial

-Fingolimod 500 microgram capsule

-Fulvestrant 250 mg/5 ml injection,syringe

-Ganciclovir 0.15% (1.5 mg/g) eye gel

-Ganciclovir 500 mg injection: powder for vial

-Idarubicin hydrochloride 10 mg injection: powder for vial

-Imatinib 100 mg capsule

-Melphalan 50 mg injection: powder for vial

-Octreotide 100 microgram/ml injection, 1 ml ampoule

-Rifapentine 150 mg tablet

-Rituximab 100 mg/10 ml (truxima®) injection: concentrated, 10 ml vial

-Rituximab 500 mg/50 ml (truxima®) injection: concentrated, 50 ml vial

-Sacubitril 24 mg + valsartan 26 mg tablet

-Sacubitril 49 mg + valsartan 51 mg tablet

-Sacubitril 97 mg + valsartan 103 mg tablet

Zoledronic acid 4 mg/5 ml injection: concentrated, 5 ml vial

1.4 Expansion of Indication of Approved Formulary Medication

-Ravulizumab Injection 100 mg/ml (Ultomiris®)
Therapeutic Classification: Blood Modifier Agent, Monoclonal Antibody.
Approved indications for the treatment of Atypical hemolytic uremic syndrome (aHUS) in adult and pediatric patients weighing 10 kg or more, in patient who have not had a complement inhibitor before or whose disease has responded to at least 3 months of Eculizumab treatment.
The privilege of prescribing for restricted to adult and pediatric hematology and nephrology central medication

1.5 Update on Off-Label Use for Central Medication

-Tofacitinib Tablet 5 mg (Xeljanz®)
- Rejected for off-label use
for the management of Alopecia Areata
Therapeutic classification: Antirheumatic, Tyrosine Kinase Inhibitor.

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1.6 MOH Formulary Application

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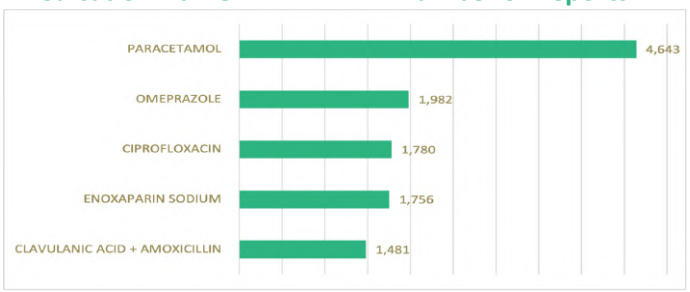
For IOS

For Android

2 The Top 5 Most Frequently Reported Medication Errors

The top 5 reported medication errors through the Ministry of Health Medication Error Reporting System were as follows:



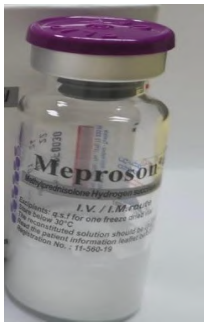
Category A: 36.58%, Category B: 60.72% Category C: 2.4% Category D: 0.15%

A: Circumstances or events that have the capacity to cause error
B: An error occurred, but the medication did not reach the patient
C: An error occurred that reached the patient but did not cause patient harm
D: An error occurred that resulted in the need for increased patient monitoring but no patient harm
E: An error occurred that resulted in the need for treatment or intervention and caused temporary patient harm

3 Recommendations to Reduce look-alike or Sound-alike Medication Errors

Case:
A 36-year-old male patient with complicated osteomyelitis was admitted to the hospital.

Meropenem was prescribed, and the pharmacist prepared the medication. However, during the last review, the pharmacist discovered a vial of a different medicine Methylprenisolone Hydrogen succinate (meprosone®), similar to Meropenem, the incorrect vial was replaced with the proper one. The error was discovered by the pharmacist who prepared the prescription.
Recommendations for reducing error risk and minimizing harm:
-Before preparing to dispense a medication, one or more pharmacy staff members should read the container label.
-When new products (including products procured to manage drug shortages) arrive in the pharmacy, conduct a further evaluation to identify any unanticipated look-alike and/or sound-alike drug name



4 Clinical Pharmacist Interventions in Intensive Care Units During Hajj

A Multicenter Retrospective Study

The Hajj pilgrimage is the largest mass gathering worldwide. The Saudi Ministry of Health (MOH) provides free medical services for all pilgrimages. In 2022, MOH incorporated clinical pharmacy services in the intensive care units (ICUs) of the sacred rituals hospitals. In addition to their role in ICU settings, they were involved in other activities related to emergency department admissions as well as conducting several educational services at the hospital level.

A multicenter retrospective chart-review study including adult critically ill patients (>14 years old) admitted to ICUs of seven sacred ritual hospitals between June 30 and July 14, 2022. Patients were excluded if they were not admitted to the ICU or admitted to an area with no assigned clinical pharmacist. Clinical interventions were categorized based on a modified version of the American Society of Health-System Pharmacists (ASHP) categorization. We found that clinical pharmacists performed 269 interventions for 82 patients admitted to the ICUs of participating hospitals. Each patient had a median of three interventions (interquartile range 2–5). The most common intervention was related to untreated indication (n = 93; 34.5%), followed by dose adjustment (n = 60; 22.3%) and recommend a proper drug selection (n = 42; 15.6%). The ICU physicians ultimately accepted all interventions.

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In conclusion, incorporating clinical pharmacy services into ICU settings during the Hajj season lead to optimize patient care. The variety of clinical pharmacists' interventions provided shows the impact of clinical pharmacists' presence among multidisciplinary teams. Further studies are needed to explore the economic implications of clinical pharmacist services during Hajj.

Interventions	N (%)
Untreated indication	93 (34.5)
Dosing recommendation/adjustment (renal or hepatic)	60 (22.3)
Improper drug selection	42 (15.6)
Medication use without indication	28 (10.4)
Monitoring/lab order	22 (8.2)
IV to PO switch	8 (2.9)
Recommendation of alternative therapy	7 (2.5)
Therapeutic duplication	2 (0.7)
Route of administration	2 (0.7)
Adverse drug reaction	1 (0.4)
Drug interaction	1 (0.4)
Medication reconciliation	1 (0.4)
Patient counseling	1 (0.4)
Medication preparation	1 (0.4)

Table 1: Types of clinical pharmacist interventions (n = 269)

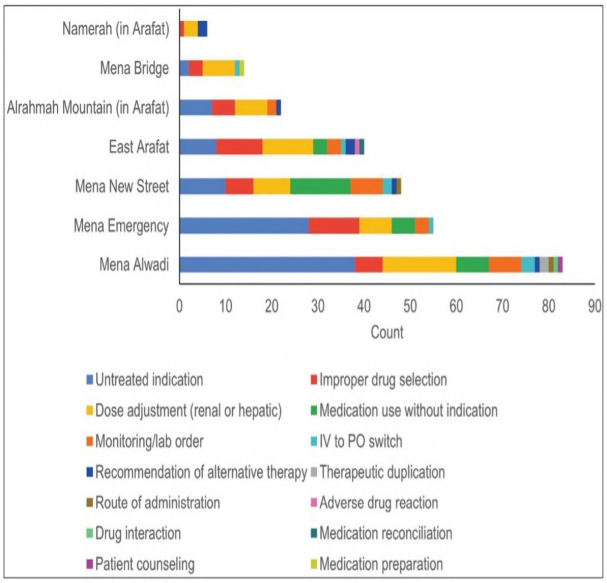

Figure 1: Distribution of clinical pharmacists' interventions in each of the sacred rituals hospital

To read the full article, please visit the below link:

https://journals.lww.com/sjcp/fulltext/2022/01040/clinical_-pharmacist_interventions_in_intensive.6.aspx

5 Over Use/Misuse of Azithromycin

The overuse of azithromycin prescribing in primary health, can increase macrolide resistance. In 1998, 18% of pneumococcal isolates were resistant to macrolides in the United States. In 2011, the resistance rate steadily increased (25% to 45% resistance to pneumococci). By 2019, resistance rates were, on average, about 40%.

Viruses are the most common cause of upper respiratory tract infections, so the routine prescribing of azithromycin to manage upper respiratory tract infections is not recommended. Azithromycin is only recommended as an alternative to first-line therapy (penicillin V or amoxicillin) for streptococcal pharyngitis, acute bacterial tonsillitis (in penicillin-allergic patients), and acute otitis media after amoxicillin failure. Also, Azithromycin is not recommended for urinary tract infection (UTI), acute sinusitis, rhinosinusitis, or acute non-gonococcal urethritis as empiric therapy because of high rates of resistance.

The use of azithromycin may result in the development of cardiac arrhythmias, especially in patients with a history of QT prolongation, given with other drugs known to prolong the QT interval, if the patient has electrolyte disturbances (potassium and magnesium), and in those receiving anti-arrhythmic agents such as sotalol, amiodarone, and procainamide.

In comparison with amoxicillin, azithromycin has been associated with a two-fold increase in the rate of cardiovascular death in adults during the first five days of azithromycin use and is independent of preexisting cardiovascular disease.

References:

1-Jones RN, Sader HS, Mendes RE, Flamm RK. Update on antimicrobial susceptibility trends among Streptococcus pneumoniae in the United States: report of ceftaroline activity from the SENTRY Antimicrobial Surveillance Program (1998-2011). Diagn Microbiol Infect Dis 2013; 75:107.

2-Kim L, McGee L, Tomczyk S, Beall B. Biological and Epidemiological Features of Antibiotic-Resistant Streptococcus pneumoniae in Pre- and Post-Conjugate Vaccine Eras: a United States Perspective. Clin Microbiol Rev 2016; 29:525.

3-Mohanty S, Johnson KD, Yu KC, et al. A Multicenter Evaluation of Trends in Antimicrobial Resistance Among Streptococcus pneumoniae Isolates From Adults in the United States. Open Forum Infect Dis 2022; 9:ofac420.

6 Mark Your Calendars

-Global Health Exhibition (GHE) -29-31 OCT 2023

-Innovative Insights On Hospital Pharmacy Practice (IHOP)-MAY 2024