12-2020

# Pharmacy Newsletter : December 2020

Pharmacy Department

# PHARMACY NEWSLETTER

December, 2020 Vol 34, Issue 03





**Published by**
Drug & Poison Information Centre
Pharmacy Services
Aga Khan University Hospital Stadium Road, P.O. box 3500, Karachi 74800, Pakistan

Pharmacy Newsletter provides information regarding the decisions of P & TC, current concepts in drug therapy, warnings and cautions issued by various regulatory agencies, drug interactions, ADRs and matters related to drug usage.

Opinions expressed are of authors and does not necessarily represent AKUH's view/recommendations.
Publication of this newsletter has been through an endowment grant from Pharmacist group of Ontario, Canada



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***Inside this Issue:***



## COVID-19 Pandemic & the Vaccine Trials | Global Progress

*Faqeeha Shakeel, Pharmacist*

The worldwide struggle to create a safe and effective COVID-19 vaccine is starting to bear fruit. A handful of vaccines now have been authorized around the globe; many more remain in development.

Below are the status of vaccines around the globe.

| Company / Sponsor | Type | Clinical trial | Dose |
|---|---|---|---|
| **CanSino Biologics** | Adenovirus type 5 vector | Phase 3 | 1 doses |
| **Oxford university, AstraZeneca** | Viral vector ( genetically modified ) | Phase 2/3 | 2 doses |
| **Pfizer,BioNtech*** | Nanoparticle formulated nucleoside mRNA (modified ) | Phase 3 | 2 doses |
| **Sinovac** | Inactivated SARS Cov-2 with aluminum hydroxide adjuvant | Phase 3 | 2 doses |
| **Moderna** | Lipid nanoparticle encapsulated mRNA | Phase 3 | 2 doses |
| **Novavax** | Recombinant SARS-Cov-2 nanoparticle adjuvant with matrix m | Phase 2b | 2 doses |
| **Gam-COVID-Vac (Russian ministry of health )** | Recombinant adenovirus type 26 and type 5 vector | Phase 2 | 2 doses |
| **Sinopharm** | Inactivated SARS-COV-2 | Phase1/2 | 2 doses |

*This vaccine has been given emergency use authorization on 11 Dec 2020

***Reference:***
*https://www.idsociety.org/covid-19-real-time-learning-network/vaccines/vaccines/#Overview*

## ToxTok | Hand Sanitizers, How poisonous they are !

*Hafsah Ashfaq, Clinical Pharmacist*

The number of children treated for accidental poisonings after ingesting hand sanitizers has soared during the pandemic. Frequently calls received at Drug & Poison Information Center for inadvertant ingestions of hand sanitizers.
Hand sanitizers usually contain alcohols that have been FDA approved for topical use. These can be hazardous in larger quantities, but a tasteful amount usually does not cause serious symptoms. Even so, to make sure it is not a product contaminated with methanol.

As of November 30, 2020, poison control centers in United States have managed 22,778 exposure cases about hand sanitizer in children 12 years and younger.*

Children will most commonly access hand sanitizer by putting their mouths on the pump, or by licking what was pumped out on their hands by parents. Serious toxicity would not be expected in either of these situations, even if it was a methanol containing product.

**Case:**
A 3-year-old boy, weighing 15kg squeezed some hand sanitizer on his hands and then licked. His mom called at Drug & Poison Control Centre and told it was a dime-size amount of hand sanitizer containing 62% alcohol. The mother was advised to keep him awake for an hour and give sweet fluids and a snack, and to watch for symptoms of inebriation (acting drunk), though no symptoms were expected with this amount. In a follow-up call to his mother an hour later, his mother reported he was a little sleepy, but it was past his bedtime. He had some juice and appeared normal.

**Managemnt plan**
- A hand sanitizer pump dispenses approximately 2.5 mL of liquid. The same child would have to drink approximately 4-5 squirts of the sanitizer to produce toxic effects requiring medical attention.
- Ethanol is well absorbed (80% to 90%). Peak concentrations are achieved within 0.5 to 1.5 hours after a single ingestion.
- There is no specific antidote.
- Activated charcoal is not indicated
  - ❖ After ingestion it can lower the blood sugar ( Give something sweet to drink and increase fluid intake).
  - ❖ Another issue with hand sanitizers is that they can be irritating to the stomach, causing nausea or vomiting (antiemetic can be given if needed).
  - ❖ In extreme untreated situations with large ingestion may lead to seizures and coma.

**Note**
- Supervise young children when they use hand sanitizer.
- Between uses, keep it out of sight and reach of young children.

***Reference:***
**https://aapcc.org/track-emerging-hazards*

# Drugs Safety & Management in Lactation

*Faqeeha Shakeel, Pharmacist*

There are number of drugs which are excreted through breast milk.
To estimate the amount of drug ingested by infant, a common term "Relative Infant Dose" is used. RID is defined as the child's daily intake of a specific drug (mg/kg) divided with the maternal daily intake (mg/kg).
Special consideration should be given to drugs when prescribed during the initial days after delivery.
**Analgesics:** If the treatment is necessary, then only short term course can be initiated for 2 to 3 days.
**Anti-depressants:** Depression is commonly existing condition in breastfeeding mothers and if left untreated can disrupt the mother and child health.
**Antibiotics:** Majority of the antibiotics have RID less than 1 % even though can cause number of adverse drug reaction in breastfed child. In Penicillins Amoxicillin can be used, if allergic macrolide can be given (one study reported increased risk of hypertrophic pylorus stenosis due to macrolide use). In cephalosporins cephalexin can be used if needed. Tetracycline should be avoided, should only be used when strictly needed and no alternative found (less than one week course of treatment). In short term treatment, with metronidazole diarrhea was associated and in some cases oral colonization

of candida was observed in neonates after the used of metronidazole. Mebendazole can be given safely as it has low concentration in breast milk.

**Anti-histamines:** Antihistamines are excreted in breast milk so non-sedating second generation should be preferred. Loratidine is the preferred agent as it has RID less than 1 %.

| Pharmacological class | Preferred agent / drug |
|---|---|
| **Short acting beta2 agonist** | Salbutamol. |
| **Long acting beta2 agonist** | Salmeterol. |
| **Corticosteroid** | Budesonide and Inhaled steroids, Short term IV steroid can be used based on risk vs benefit. |
| **Antihistamine** | Loratidine, Desloratidine, Fexofenadine, Cetirizine. |
| **Antibiotics** | All, monitor for GI symptoms. |
| **Antidepressants** | Paroxetine, Sertraline. |
| **Antipsychotics** | Haloperidol, Olanzapine, Quetiapine, Risperidone. |
| **Benzodiazepine** | Lorazepam. |
| **Analgesics, NSAIDS** | Paracetamol and Ibuprofen, Flurbiprofen, Piroxicam, Naproxen and Indomethacin. |
| **Analgesic, OPIOIDS** | Morphine, Fentanyl. |
| **Anticholinergics, Bronchodilators** | Ipratropium bromide. |

**ACE inhibitor:** The evidence for the safe use of ACE inhibitors in breastfeeding is very limited. Small amounts of ACE inhibitors can cause hypotension in premature infants and neonates when used therapeutically. It is, therefore, advised to monitor infants, especially premature and newborn, for hypotension if exposed to an ACE inhibitor while breastfeeding. It is advised to avoid these drugs during first few weeks after delivery due to profound neonatal hypotension.
*Generally, those medications whose relative infant dose in less than 10% are considered safe during lactation. It is about those which are not contraindicated.*

**ACE inhibitors safe in breastfeeding:**

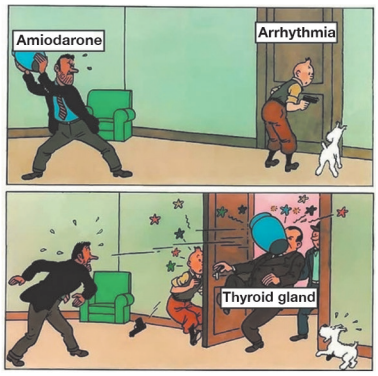
| Drug | RID | Comment |
|---|---|---|
| **Captopril** | 0.01% to 0.02% | Acceptable for use in breastfeeding, monitor for hypotension. |
| **Enalapril** | 1.1% | Acceptable for use in breastfeeding, monitor for hypotension. |

Benazepril and Quinapril are also considered as safe in lactation.
Ramipril, Lisinopril, Fosinopril or Perindopril: use in breastfeeding is not recommended.

***Reference:***
*Andersen JT, Futtrup TB. Drugs during lactation. Adverse Drug React Bull. 2020 Aug;323(1):1251-4.?*

# Amiodarone Induced Thyrotoxicosis (AIT) | A Case

*Haleema Noor, Pharmacist*




On one casual day at rounds while discussing complications of COVID-19 we were introduced to something interesting!
Event of AFIBRILLATION! One of the consequences for patient with hyperthyroidism**,** but quite an alarming sign for a patient discussed below, that too on adjusted doses of Thyroxine.

She came with a history of hypothyroidism and was admitted to COVID unit after her PCR reported positive. She was on thyroxine and it was continued in inpatient after medication reconciliation.

Patient was started on amiodarone infusion after developing cardiac arrthymias while after one day of amiodarone infusion and maintenance therapy patient experienced afibrillation.

When the cause of the event was further dug down, it was identified as Amiodarone induced thyrotoxicosis (AIT) since patient had abnormally raised T3 levels from that day and also a dose of 150 mcg Thyroxine was administered before breakfast. There are many treatment options available for AIT. One opted in this case study was;

1. Discontinuation of amiodarone and switching to alternative rate control beta-blocker metoprolol.
2. High dose glucocorticoid therapy with 6 mg IV Dexamethasone per day was given, which works by directly inhibiting the 5'-deiodinase activity and blocking the fractional conversion of T4 to T3.

**Conclusion:**

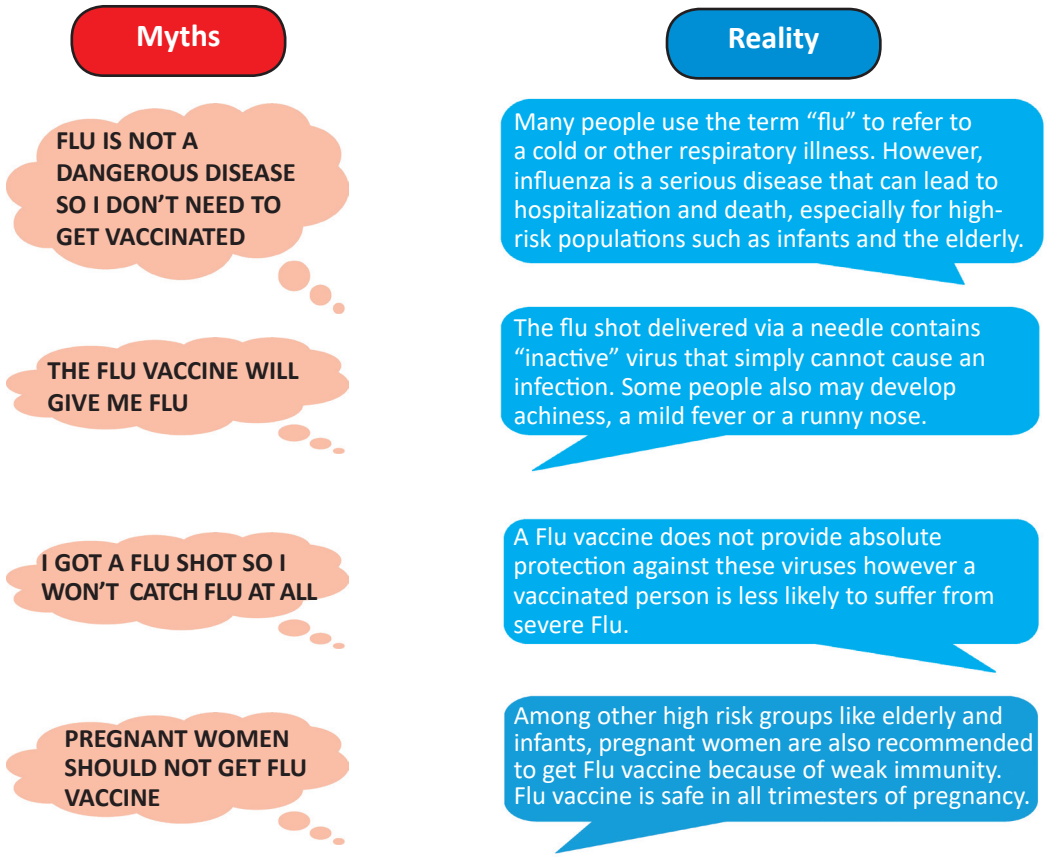
Timely intervention and identification of an adverse drug event or drug interaction can save patient's life.

***Reference :***

*Loh K Amiodarone-induced thyroid disorders: a clinical review Postgraduate Medical Journal 2000;76:133-140.*

# Myths & Reality | Flu Vaccine

*Muniba Naqvi, Trainee Pharmacist*




***Reference:***

*https://www.who.int/news-room/spotlight/influenza-are-we-ready/5-myths-about-the-flu-vaccine*

**Provide us your Valuable Feedback!**

**Link:** *https://forms.gle/FCo9ZuE4CConzFp46*