

# Complications from Flu – an unnecessary evil!

*How to treat and manage patients suffering from influenza in order to prevent unnecessary complications and adverse outcomes.*

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## Abstract

The pharmacist plays a pivotal role in preventing flu complications, be it by offering flu vaccinations or by referring a patient to a general practitioner should flu symptoms linger for too long. The northern hemisphere suffered through an intense flu season this past winter. As of early March 2018, the number of US paediatric deaths associated with the disease surpassed 150, and the cumulative hospitalisation rate reached its highest level since 2010.<sup>1</sup> Our aim is to learn from these experiences and ultimately reduce mortality.

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## Introduction

Despite new discoveries in medicine, the old expression “prevention is better than cure” stays true in medical practice. It is far easier to prevent complications by administering flu vaccinations than to treat complications such as pneumonia, myocarditis or encephalitis. The flu season abroad was intense, the main reason believed to be low effectivity of the vaccine against H3N2, resulting in more outbreaks and complications.<sup>2</sup> However, it is still advisable to be immunised as complications and severity would be less. We need to remind patients that the common cold (rhino, corona and adeno) and flu (influenza) are caused by viruses, therefore antibiotic treatment is not needed unless there is a secondary bacterial infection. It is necessary to explain the differences between the symptoms of a common cold and those of flu, as these terms are often used interchangeably by patients.

Table I refers to these differences and explains the conditions that present with nasal congestion with their overlapping symptoms that need to be distinguished from one another.

The mainstay treatment of the common cold and flu is symptomatic as antiviral medication is not our first line of treatment although it was recently proven in clinical trials (meta-analyses) that in high-risk patients, prevention with antivirals may have merit. High-risk patients in this context were considered: residents in nursing and chronic care facilities, adults > 65 years, pregnant women (and two weeks post-partum) and patients with chronic medical conditions (cardiac, respiratory, immuno-incompetent).<sup>2</sup> The management of the common cold and flu should be guided by the medical history provided by the patient. Information on the duration and severity of symptoms as well as the comorbid conditions is needed to decide whether the patient can do with an over-the-counter (OTC)

intervention alone, or whether the pharmacist needs to refer the patient for a consultation with a general practitioner (GP). Our elderly and paediatric populations are our biggest concern as we often struggle to assess symptoms in small children, and as the elderly often present as atypical (e.g. apyrexial).

In the paediatric population it is important to prompt the caregiver for the following information:

1. Has the patient had a body temperature of more than 38.4 °C for longer than three consecutive days?
2. Has the patient been refusing feeds for a prolonged period of time (several days)?
3. Is there a decreased responsiveness, an increased irritability or lethargy?
4. Does the patient have symptoms of rapid breathing or seem to breathe with great effort?
5. Are there signs of red eyes or a yellow discharge from the eyes?
6. Are there signs or symptoms of an ear infection (often increased crying when baby is placed in a horizontal position)?

If the answer to any of the above questions is YES, the patient should be referred to a GP for a consultation.<sup>3</sup>

As mentioned, the elderly population (patients > 65 years old) is also at risk of complications (pneumonia, myocarditis, sinusitis) from the influenza virus due to a weakened immune system and comorbid conditions. It is necessary to be vigilant in identifying warning signs and symptoms, ultimately seeking early intervention to prevent an adverse outcome.

The following symptoms and signs should be investigated:

Table I. Difference in characteristics between the common cold, flu and allergic rhinitis<sup>5,6</sup>

Characteristics	Common cold	Flu	Allergic rhinitis
<b>Onset</b>	Gradual	Abrupt	Varies: quantity of allergen levels
<b>Causative organism</b>	Adeno-, rhino- and corona- viruses	Influenza A and B	No organism, allergen
<b>Nasal congestion</b>	Yes	Yes	Yes
<b>Fever</b>	Mild to moderate < 39 °C	Moderate to high > 39 °C	No
<b>Headaches</b>	Rare	Common	Rare
<b>Myalgia</b>	Rare	Common	Rare
<b>Sneezing</b>	Common	Sometimes	Common
<b>Sore throat</b>	Common	Sometimes	Common
<b>Coughing</b>	Mild to moderate	Common, can be severe	Often due to post-nasal drip

1. Symptoms worsening after three to four days
2. Difficulty in breathing (dyspnoea)
3. Chest pain
4. Confusion
5. Severe vomiting and diarrhoea
6. Lethargy

If any of the above-mentioned are present, a referral is needed to ensure that complications are prevented and supportive treatment is started sooner than later.

## Symptoms and treatment

### General considerations

It is a good opportunity to educate patients on the value of flu vaccinations. Many patients are sceptical whether there is any value, reporting that they have had a flu shot in the past but still fell ill. The value of preventing complications due to the flu (myocarditis, pneumonia, encephalitis) and the reduction in severity of an acquired influenza infection should be stressed. The fact that it does not prevent against the viruses of the common cold (rhino, corona and adeno), which is another disease entity altogether and often confused with flu, should be communicated. The medical fraternity should try to make people understand that those who are prone to complicated influenza infections can only benefit from vaccination.

General body aches, myalgia and headaches can be relieved with analgesics and/or anti-inflammatories. Nonsteroidal anti-inflammatory drugs (NSAIDs) should be used with caution in patients with severe hypertension, history of peptic ulcer disease and compromised renal function. Arthrotec® (diclofenac sodium and misoprostol) is a good choice in patients with a history of peptic ulcer disease. Misoprostol has a protective effect needed for patients with a compromised gastric mucosa (note that it is contraindicated in pregnancy). Paracetamol remains a good antipyretic and can be administered every four to six hours (adults dose: 500 mg to 1 g every four to six hours, with a maximum of 4 g per day). Empaped® suppositories are used in the paediatric population and are valuable especially in children who refuse feeds and therefore present with a challenge of oral intake of any

kind. Aspirin (Disprin®) is also effective in treating high fevers in adults and can be combined/alternated with paracetamol.

Encourage sufficient fluid intake to lubricate the mucous membranes and to replace fluid loss due to high fevers. It can also help to reduce sputum viscosity promoting drainage of secretions.

### Nasal symptoms

Nasal congestion due to a cold is the result of viruses damaging the ciliated cells in the nasal cavity and the bronchi. This damage initiates the release of inflammatory and neurogenic mediators contributing to plasma exudation and vasodilatation resulting in oedema and swelling of the nasal mucosa. Sneezing and a post-nasal drip may also be present, the latter causing, in some instances, a sore throat and a cough. Nasal congestion can be treated topically or systemically. Topical preparations cause fewer side-effects and are therefore our first choice. Table II lists several topical preparations that can be dispensed. Their limitation however is that they can be used for only three days or up to six days, if used at night only, due to rebound-congestion.

The use of a hypertonic saline nose spray (e.g. Drixine® hypertonic nasal spray) concomitantly is a good strategy and should be continued after the three-day period of topical decongestants. Promote the use of preservative-free sprays, such as Drixine® and Sterimar® which are better tolerated by patients sensitive to additives. They promote the flushing of nasal secretions (getting rid of the viruses in the nasal cavity), reduce nasal oedema and improve the nasal cavity's ability to absorb preparations (clearing the nasal cavity of secretions). A practical approach is to use an antihistamine at night (not combination preparations with pseudo-ephedrine, ephedrine or phenylpropanolamine which can cause restlessness and palpitations) to dry secretions and reduce coughing due to post-nasal drip when lying flat. During the day it is advisable to stimulate nasal drainage and this can be enhanced by hypertonic saline nose sprays as well as mucolytic preparations like ACC 200® or Prospan®'s effervescent tablets.

If congestion cannot be reduced by topical preparations alone, a systemic preparation can be used instead whilst concomitantly using hypertonic saline nasal sprays. Table III lists preparations,

mostly in combination with antihistamines, paracetamol/aspirin and pseudoephedrine to combat nasal congestion. The limitation of these systemic preparations is that they should be used with caution in patients with severe hypertension, cardiac pathology (abnormal cardiac rhythms, heart failure, myocardial infarction, angina), hyperthyroidism and men with prostate enlargement. The elderly patient often has comorbidities and proves to be a therapeutic challenge in this regard.

Rhinitis can be treated with antihistamines. The second generation antihistamines are a good choice and have fewer side-effects (sedation, dry mouth) than the first generation. Most remedies registered for colds and flu are combination preparations (antipyretic or anti-inflammatory plus decongestant) and should be used with caution due to their anticholinergic effect causing thickening of the secretions in the lungs, sinuses and the middle ear. This may lead to increased stasis and inhibit drainage.

**Fever and pain**

The patient presenting with flu will report an abnormal body temperature (or the suspicion thereof) more often than a patient presenting with a common cold. It should also be remembered that the elderly often do not present with fever due to a weakening fever response due to age (older is colder). Fever can be treated

with antipyretics (paracetamol or aspirin in adults) and with NSAIDs (Ibuprofen®, Naproxen®). These preparations can be used eight-hourly and will help the patient to feel better in general. If a high fever persists, an NSAID and paracetamol/aspirin can be alternated every four hours. NSAIDs also reduce inflammation (sore throat) and the analgesic effect will improve myalgia and headache which are often part of the symptomatology.

Throat lozenges or a local anaesthetic throat spray can be used in addition to the analgesics or anti-inflammatories to soothe a sore throat or in cases where there is a contraindication for systemic NSAID, paracetamol or aspirin use. In order to reduce throat pain fast and effectively, especially in children struggling to feed, suggest administration of an anaesthetic throat spray prior to feeding/meals. Where the administration of medication per os is a challenge due to painful swallowing or vomiting, Voltaren® or Empaped® suppositories are an effective route to control body temperature, body aches and a sore throat. These can be dispensed to adults and paediatric patients.

**Coughing**

There are many cough preparations on the market. Suppressing a cough for example in a patient with lung cancer, terminal illness or alveolitis due to fibrosis, may prove necessary but in an otherwise

**Table II.** Topical preparations to treat symptoms and signs of common cold and flu<sup>4,7</sup>

Topical preparation	Active ingredient	Indication/duration	Contraindications/special considerations
Iliadin®	Oxymetazoline	Relieves symptoms, use < 6 days	Lower dose/ml than Drixine®
Adco-Naphensyl®	Phenylephrine	Short-term relief	Use with caution in hypertensives and patients with cardiovascular disorders
Vibrocil-S®	Dimethindene, phenylephrine	Short-term relief	Use with caution in hypertensives and patients with cardiovascular disorders
ENT®	Phenylephrine, naphazoline	Every 6 hours for 3 days, age 3 to adult	Use with caution in severe coronary disease and hypertension
Sinumax Allergy Nasal Spray®	Levocabastine	Antihistamine – rhinitis	Possibility of local irritation documented
Andolex-C®	Benzydamine, alcohol	Throat inflammation	Contains alcohol
Medi-Keel A®	Benzocaine HCl, Chlorhexidine gluconate, Alcohol	Sore throat	Use with caution in combination with anticholinergics
Strepsils Intensive®	Flurbiprofen, sugar	Throat inflammation	Not suitable for diabetics
Difflam®	Benzydamine, Cetylpyridinium	Sore throat and antiseptic	Use with caution in case of cardiac arrhythmias

**Table III.** Systemic preparations to treat symptoms and signs of common cold and flu

Systemic preparations	Active ingredient	Indication/duration	Contraindications/special considerations
Sinustat Flu®	Paracetamol, phenylpropranolamine	Congestion, pain and fever due to common cold and flu	Use with caution in patients with cardiovascular disease, hypertension and hyperthyroidism
Sinutab 3-way®	Pseudoephedrine, ibuprofen	Cold, flu and sinusitis	Use with caution in hypertension, glaucoma, peptic ulcer disease
Demazin®	Phenylephrine, chlorpheniramine	Short-term decongestant	Contraindicated in severe hypertension, cardiovascular disease and hyperthyroidism use with caution, several drug-drug interactions
Coryx® (paediatric)	Tripolidine, pseudoephedrine, vit C	Used in paediatric population from 2 years	Contraindicated in severe hypertension, cardiovascular disease, hyperthyroidism and diabetes mellitus use with caution
Flusin®	Chlorpheniramine, ephedrine, paracetamol, caffeine	Decongestant, antihistamine and pain relief	Contraindicated in severe hypertension, cardiovascular disease and hyperthyroidism use with caution, caffeine may cause insomnia

healthy patient that presents with a productive cough, suppression will lead to mucous retention and stasis which in turn is a good growth medium for organisms. The fact is, a continuous cough especially at night is not ideal and not conducive to a good night's rest or recovery from illness. It would be better to give a cough suppressor at night.<sup>7</sup> Dextromethorphan (Benlyn Dry Cough<sup>®</sup>) is a good option to suppress a non-productive cough and can also be used in the paediatric population (preferably from six years of age). Pholcodine (Pholtex Junior<sup>®</sup> and Pholtex Forte<sup>®</sup>) a good option as it has a long half live, implying less dosing requirements and is registered for use in a paediatric patient from one year of age. Dextromethorphan (Benlyn Dry Cough<sup>®</sup>) is another option to suppress a non-productive cough and can also be used in the paediatric population (preferably from 6 years of age). Codeine phosphate has a similar method of action as dextromethorphan but has more side-effects. Common side-effects include constipation, dizziness or excitation, nausea and vomiting, dependency and, in some patients, respiratory depression. It will therefore not be your first line of choice in asthmatics or dependency-prone patients. Some cough mixtures have a high alcohol content and cannot be used in patients with alcohol addiction. They do have additive analgesic effects in combination with paracetamol, aspirin and NSAIDs and these properties can be used to the patient's advantage. In terms of additional need for bronchodilation, Duro-Tuss<sup>®</sup> has bronchodilatory as well as mucolytic properties which is beneficial to reduce the viscosity of the mucus and promotes drainage.

Antihistamines and topical nasal steroids are more beneficial in a cough associated with allergic rhinitis.<sup>7</sup>

If there is no bronchospasm or suspected bacterial infection present with only a mild irritating cough, a simple linctus (citric acid monohydrate, anise water, amaranth, chloroform) or a homemade mix of lemon and honey can alleviate mild symptoms.

If the patient appears to be having tightness of the chest, a bronchodilator inhaler can be added. This is not often the case in patients suffering from an uncomplicated common cold or flu episode but may be a reality in asthmatics where a viral infection will exacerbate their asthmatic symptoms.

Some patients may benefit from saline inhalations and the use of a humidifier to improve the conditions in the room.

## Conclusion

The successful management of a patient with a common cold or flu starts with promoting vaccination before the flu season starts! When the patient presents at your counter, take time to obtain a proper medical history of signs and symptoms. The duration of symptoms, the assessment of comorbidities and acting upon danger signs in patients at risk of complications, will reduce morbidity and mortality from these viral infections. The pharmacist has an important role to play in educating patients in terms of prevention of disease (flu vaccinations) as well as to help them to distinguish between a bout of flu or just a common cold. Treating patients' symptoms effectively is a challenge especially in the realm of increased patient demands. In 1918, 100 years ago, a flu pandemic hit the world, killing between 50 and 100 million people; we have progressed, let us not lose momentum!

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