

Tamiflu Treatment and Prophylaxis

We are in the midst of a significant influenza A outbreak in Colorado. To my knowledge, there are outbreaks in at least half a dozen long-term care facilities and the number could be much higher.

When there are positive cases of influenza A, the question of who should be on prophylaxis and for how long is always a difficult one. From my perspective, there is not a single best answer for this, so I always give advice on a building-by-building, case-by-case analysis of the architecture, patients, community, etc.

What is clear is that when patients or staff need Tamiflu, **they need it quickly**. To briefly review again how this medication works will explain why.

Tamiflu does not kill the influenza virus. It works by trying to keep replicated influenza virus (*a process that occurs inside cells in the posterior nose and pharynx*) from escaping and moving further along the upper respiratory tract so that they cannot migrate to the next set of cells closer to the lungs where it can do the most harm.

It typically takes almost exactly 2 days from exposure to the virus until the **acute** onset of symptoms which are almost always a sudden, high **fever** or **nonproductive cough**. From that point in time, it typically takes almost exactly 2 days until the virus gets to the carina (*the place where the lungs split into left and right*) and suddenly moves throughout the entire pulmonary space. This is when patients get viral pneumonia, decompensate and get very sick... or die.

Keep the above in mind when you think about ordering Tamiflu for patients who have influenza symptoms or for whom you are providing prophylaxis.

Treatment

EVERY HOUR MAKES A DIFFERENCE. If it takes 20 minutes for flu to replicate in cells and begin migrating, every hour treatment is delayed means hundreds of thousands or millions of viruses have been given unabated access to more cells and further replication. The more viruses, the worse the symptoms and risk for serious complications (eg, particularly heart attacks) or death.

That means that **starting Tamiflu 10 minutes after symptoms appear** (*ie, taking it from an E-Kit lucky enough to be stocked with it*) is better than starting it 2 hours later from the pharmacy which is better than starting it 6-8 hours later when you get the results of the rapid test which is better than starting it 2 days after symptoms started when everyone is finally convinced it isn't just "*a little cough that will go away or not turn into anything*".

Denver is in the midst of an endemic that could easily soon be an epidemic.

IF YOU THINK IT SOUNDS LIKE INFLUENZA in a facility that has **not** had it confirmed yet... in order...

- **Start Tamiflu – STAT** – and then,
- Order a Rapid Flu test – STAT (if the test is done well and is negative, you can stop the Tamiflu)

IF YOU THINK IT SOUNDS LIKE INFLUENZA – in a facility that **has** had confirmed cases already... **Start Tamiflu – STAT**. **Do not order a rapid flu swab or wait for other tests to come back (eg, CXR, CBC) before starting the Tamiflu**. As noted in earlier emails, unless there is a really compelling reason to believe it is not influenza, you should not need to order a CXR, CBC or any other tests.

For both of these cases, if you haven't received the Tamiflu from the pharmacy within 1-2 hours, start calling them every hour to stress the importance of getting it quickly. If you do not get it within 4 hours, involve your medical director immediately – regardless of the time of day or night.

Prophylaxis

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If you are going to have any chance to prevent full-blown disease in staff or residents (regardless of their vaccination status), start prophylaxis quickly. Your Medical Director should already be involved at this point both to let them know what is happening as well as being the provider of record for prophylaxis of staff and/or patients. After that, if you haven't received the Tamiflu from the pharmacy within 2-4 hours, start calling them every hour to stress the importance of getting it quickly. If you do not get it within 4 hours, involve your medical director again regardless of the time.

Starting prophylaxis promptly – when and where needed – may be the difference between preventing disease in a few staff members (that won't have to be replaced by floats) or patients (where you may prevent some serious or bad outcomes).

OTHER CONSIDERATIONS

1. Prophylaxis Dosing:
 - GFR >60 or Normal: 75 mg po qd
 - GFR 30-60: 30 mg po qd
 - GFR >10, but <30: 30 mg po qod
 - GFR <10: No Tamiflu
2. Limit visitors
3. Limit staff or any persons who move between units
4. Offer vaccine (High Dose or Adjuvant) once more to anyone who did not get vaccinated, especially if there are parts of the facility that would not immediately be prophylaxed. If you give anyone vaccine, they should **NOT** receive Tamiflu for at least 72 hours.

Good luck and let me know if I can help with any confusion!

Greg Gahm, MD