CLINICAL GUIDELINE

Influenza in Pregnancy

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Influenza in Pregnancy, NHS Greater Glasgow and Clyde Guideline

Pregnant women have a higher risk of severe influenza infection compared to the general population. Women remain at risk of severe infection in the post partum period.

1.Influenza infection and complications

Symptoms

Transmission of influenza is by droplets, aerosol or direct contact with respiratory secretions. Incubation period is 24 to 48 hours and the patient remains symptomatic for 3 to 5 days (can be up to 7 days). Uncomplicated influenza may present with fever, coryza, headache, malaise, myalgia, arthralgia and often there can be gastrointestinal symptoms. Complications which can arise from infection are acute bronchitis, viral and secondary bacterial pneumonia, exacerbations of asthma and neurological complications (including meningitis and encephalitis). The main neonatal complication is prematurity when delivery is indicated.

SARS-CoV-2 (COVID19) and seasonal influenza

Patients who present with respiratory symptoms during co-circulation of both SARS-CoV-2 and seasonal influenza should be tested for both. Co-infection with both viruses has been reported and may result in increased risk of mortality. However, SARS-CoV-2 can remain detectable in respiratory samples for a period of time post-infection at low intermittent levels. A PCR positive result for SARS-CoV-2 should not exclude investigation for influenza virus when the patient presents with new onset of respiratory symptoms especially during influenza season.

Laboratory testing

Please send a respiratory sample (throat swab or combined throat/nose swab in MSS) for influenza and SARS-CoV-2 PCR testing to the West of Scotland Specialist Virology Centre. To request influenza and SARS-CoV-2 PCR testing please select the option "Respiratory viral PCR" on Track. If urgent testing is required please email the laboratory (west.ssvc2@nhs.scot) stating the nature of the urgency. The laboratory is open between the hours of Monday-Friday 9am – 8pm/Weekends 9am-5pm and a member of the clinical team will respond to your email. If the request occurs out with working hours, the clinical team will respond the following day.

If the patient has an influenza-like illness do NOT delay treatment while waiting for a laboratory confirmation.

PoCT PCR machines are available on different wards offering rapid influenza A, influenza B and SARS-CoV-2 testing. During the covid19 pandemic the availability of these PCR PoCT machines and locations may change to meet demands of the service. Only trained personnel should use the PoCT and local guidance should be followed. In rare cases a strong positive SARS-CoV-2 or influenza has generated a false negative result in patients who are co-infected with both viruses. If a positive sample is detected via PCR PoCT, please send a sample to the West of Scotland Specialist Virology centre to rule out co-infection and for surveillance sequencing of both SARS-CoV-2 and influenza.

Repeat testing is not required unless the patient deteriorates or has a non-resolved illness after 5 days of therapy. Please contact the clinical team at the West of Scotland Specialist Virology Centre to discuss repeat testing and treatment options (Monday-Friday 9am – 5pm, 0141 242 9656). Alternatively email west.ssvc2@nhs.scot, Monday-Friday 9am-8pm/Weekends 9am -5pm and a member of the clinical team will get back to you. Out-with these hours please contact the on-call virologist via the switchboard.

Treatment and management

General measures include admission and supportive therapy; IV fluids, paracetamol if pyrexial, analgesia and thromboprophylaxis. **If the patient has an influenza-like illness do NOT delay treatment while waiting for a laboratory confirmation**.

Maternal observations including respiratory rate and oxygen saturations should be recorded at regular intervals. High Dependency Level care and Consultant involvement (obstetric and anaesthetic) should be considered early as should involvement of other specialties including respiratory and critical care if there are clinical concerns or signs of deterioration. These women should be nursed in single rooms.

Fetal monitoring should take place once the mother is stabilised and should be tailored to the clinical circumstances and gestation. Consideration of delivery may be required if the mother is

unwell or deteriorating but this decision should involve senior staff and other relevant specialties as outlined above.

First line therapy, Oseltamivir should be started as soon as possible and within 48 hours at 75mg twice daily for 5 days (patients weighing more than 40 kg) or 60mg twice daily (patients weighing 23 – 40 kg).

Zanamivir (10mg inhaler PO twice daily for 5 days) is the first line antiviral for severely immunosuppressed patients during an A/H1N1 dominant year. If the patient is unable to take zanamivir inhalation then administer oseltamivir. See Appendix 1.

Oseltamivir dose may need adjustment in those with renal impairment.

Oseltamivir and Zanamivir are neuroaminidase inhibitors. A large multinational register study found no increased risk of adverse neonatal outcomes or congenital malformations associated with exposure to neuroimidase inhibitors.

National guidelines are updated frequently therefore; please contact the clinical team at the West of Scotland Specialist Virology Centre to discuss the following:

- Treatment out-with the 48 hours (Oseltamivir) and the 36 hours (Zanamivir)

- Procedures for neonatal treatment/prophylaxis when maternal influenza infection is suspected or confirmed

Monday-Friday 9am – 5pm: 0141 242 9656 or Monday-Friday 9am – 8pm email west.ssvc2@nhs.scot. Out-with these times: Switchboard and ask for the on-call virologist

2.**Influenza infection prevention**

Vaccination

All pregnant women should receive influenza vaccine regardless of gestation. There is evidence that the vaccine may offer passive immunisation to the neonate in the first few months of life. Pregnant women should receive only an **inactivated influenza vaccine**.

Prophylaxis

Prophylaxis can be issued to those who are exposed to influenza and who are in an at risk group. When influenza is circulating in the community, prophylaxis may be issued where there has been contact with an influenza-like illness in the household or on a ward. Pregnant women fall into the at risk category and can therefore be offered prophylaxis. Prophylaxis is not required in those who have received the influenza vaccine ≥14 days before exposure. Prophylaxis should be considered in

those who have received the influenza vaccine less than 14 days ago or where the dominant circulating strain of influenza is NOT well matched to the seasonal vaccine.

To discuss influenza prophylaxis please contact the clinical team at the West of Scotland Specialist Virology Centre:

Monday-Friday 9am – 5pm: 0141 242 9656 or Monday-Friday 9am – 8pm email west.ssvc2@nhs.scot. Out-with these times: Switchboard and ask for the on-call virologist

Prophylaxis dose:

Oseltamivir, therapy should be started within 48 hours first line 75mg once daily for 10 days (patients weighing more than 40 kg) or 60mg once daily (patients weighing 23 – 40 kg)

If exposed to suspected or confirmed oseltamivir resistant influenza then give administer zanamivir inhalation 10mg once daily for 10 days (therapy should be started within 36 hours)

Oseltamivir dose may need adjustment in those with renal impairment

References:

For information on weekly circulating influenza and SARS-CoV-2 refer to: https://www.publichealthscotland.scot/publications/

For up-to-date information on influenza antiviral guidance refer to: https://www.gov.uk/government/publications/influenza-treatment-and-prophylaxis-using-anti-viral-agents

For information on influenza vaccines refer to: https://www.gov.uk/government/publications/influenza-the-green-book-chapter-19

Neuraminidase inhibitors during pregnancy and risk of adverse neonatal outcomes and congenital malformations: population based European register study. Graner et al. BMJ 2017;356:j629

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APPENDIX 1

Definition of Severely Immunosuppressed:

- Severe primary immunodeficiency
- Current or recent (within 6 months) chemotherapy or radiotherapy for malignancy
- Solid organ transplant recipients on immunosuppressive treatment, or within 12 months of receiving immunosuppression.
- Patients with current graft-versus-host disease.
- **Patients currently receiving high dose systemic corticosteroids (equivalent to≥ 40mg prednisolone per day for>1 week in an adult, or ≥ 2mg/kg/day for ≥ 1 week in a child), and for at least three months after treatment has stopped.**
- HIV infected patients with severe immunosuppression (CD4<200/μ or <15% of total lymphocytes in an adult or child over 5; CD4 <500/μ or <15% of total lymphocytes in a child aged 1 to 5; expert clinical opinion in a child aged under 1)
- Patients currently or recently (within 6 months) on other types of highly immunosuppressive therapy or where the patient's specialist regards them as severely immunosuppressed.