MINISTRY OF HEALTH
24-26 GRENADA CRESCENT, KINGSTON 5, JAMAICA
EMERGENCY, DISASTER MANAGEMENT AND SPECIAL SERVICES BRANCH
TELEPHONE NOS. 1876-633-7922 CUG-1876-317-9980 Email: melodyennis5@gmail.com

ZIKA VIRUS INFECTION
CLINICAL MANAGEMENT PROTOCOL – PREGNANT WOMEN

OVERVIEW

Zika virus infection is a usually mild disease that's transmitted through the bite of an infected mosquito. Most people fully recover from Zika virus infection without severe complications and severe illness or deaths from Zika virus are extremely rare. The virus can however be dangerous for babies born to women who were infected with the virus during pregnancy.

In mid-April 2016, it was confirmed that Zika can cause microcephaly and other severe foetal brain defects. The condition may also be associated with severe developmental issues and in rare instances death.

CLINICAL FEATURES

No clinical differences have been described between pregnant and non-pregnant women. After an infected mosquito bite, symptoms of the disease typically appear after a three (3) to twelve (12) day incubation period. Cases are usually not fatal. Infection may progress asymptomatically (70-80% of cases), or present with the following clinical features:

- Fever 37.2°C to 38°C less than 30% of patients will have a fever
- Muscle and / or joint pain
- Itchy descending maculopapular rash
- Weakness
- Non-purulent conjunctivitis
- Retro-orbital pain
- Oedema of the lower limbs
- Headache
- Lymphadenopathy (isolated or generalized)

- Less common symptoms – Anorexia, vomiting, diarrhea, abdominal pain

CASE DEFINITION

SUSPECTED CASE

A suspected case is:
a person presenting with rash OR
a person presenting with fever and at least one of the following signs or symptoms: arthralgia; or arthritis; or conjunctivitis (non-purulent / hyperaemic)

CONFIRMED CASE

A confirmed case is:

a person with laboratory confirmation of Zika virus infection: presence of Zika virus RNA or antigen in serum or other samples (e.g. saliva, tissues, urine, whole blood); or IgM antibody against ZIKV positive and Plaque Reduction Neutralization Test 90 (PRNT 90) for Zika virus infection with titre ≥ 20 and Zika virus PRNT90 titre ratio ≥ 4 compared to other flaviviruses; and exclusion of other flaviviruses

ANTENATAL TESTS FOR PREGNANT WOMEN

While universal serological testing of all pregnant women in the affected area may help identify asymptomatic but infected pregnant women this is not recommended at this time. All women who present with a suspicious rash should be screened. However where possible, consider offering a first trimester ultrasound scan to all women presenting for antenatal care in order to accurately date the pregnancy.

LABORATORY DIAGNOSIS

The diagnostic steps recommended for pregnant women are the same as those recommended for the general population. Diagnosis requires detection of the virus in maternal serum using RT-PCR within seven (7) days of onset of symptoms. Zika virus may also be detected in urine specimens collected in the acute phase of the illness and up to two (2) weeks after the onset of symptoms. RT-PCR can also be used to identify viral RNA in saliva and amniotic fluid, but these should not be used as the primary specimens for Zika virus testing.

Serological tests can also be performed to diagnose Zika virus infection, with IgM antibodies detected through enzyme linked immunosorbent assays (ELISA) or immunofluorescence from the seventh day after the onset of symptoms. The serum of individuals with a previous history of infection by other flaviviruses (e.g. Yellow fever, dengue) has an increased likelihood of cross reaction.

SAMPLES

Required Samples

- Serum (5 to 8 mls in a Red Top Tube)
- Urine (3 ml to 10 mls in a sterile Universal Container)

SAMPLE TRANSPORT & HANDLING

- All Samples should be transported on ice or with ice packs to the National Public Health Laboratory (NPHL), immediately
- The sample(s) may be refrigerated at 2 to 8°C for 48 hours while awaiting referral to the NPHL
- Samples should be frozen at -10 to -20°C if they have to be kept longer than 48 hours or within a week following collection while awaiting referral to the NPHL

GENERAL CARE AND SYMPTOMATIC TREATMENT

To date, no vaccine, antiviral agent or specific therapy has been developed for Zika virus infection to reduce the clinical impact or risk of fetal infection. Consequently, treatment has focused on interventions that can be safely used in pregnant women to relieve an itchy rash, fever, headache, and arthralgia. Symptomatic pregnant women with Zika virus infection should be advised to rest and use personal protective measures.

FEVER AND HEADACHE

Fever should be managed with physical cooling measures (e.g. damp cloths, baths or showers) and acetaminophen (paracetamol). Headache should also be treated with paracetamol (acetaminophen). The use of aspirin or other nonsteroidal anti-inflammatory drugs (NSAID) should be avoided.

ITCHY RASH

Although there is no evidence to either support or refute the safety of topical emollients for treatment of itchy rash during pregnancy, clinical experience suggests that they are safe. Therefore, topical applications of calamine lotion or menthol-based aqueous agents may be used. In general, the safety profile of most antihistamines for systemic treatment of itching during pregnancy is high. An oral first generation antihistamine, usually diphenhydramine and chlorpheniramine, is recommended as a first line treatment. Loratadine and cetirizine should be provided as alternative options after the first trimester of pregnancy.

PREGNANCY MANAGEMENT

The attached algorithm (Decision Chart) provides the sequence for the testing and care of pregnant women. All pregnant women should be advised to present for their scheduled antenatal visits in accordance with the recommendations of their healthcare providers. At all antenatal visits healthcare providers should ask about symptoms of Zika and provide counselling on:

1. Individual protective measures against mosquito bites and sexual transmission
2. Environmental measures and actions to reduce mosquito proliferation at home and the workplace.
3. Prompt reporting of signs and symptoms of Zika virus infection that may occur between visits.
4. Zika virus and its impact on pregnancy

In the event a pregnant patient presents with symptoms and signs of Zika virus infection:

1. do Zika virus testing
2. provide symptomatic treatment
3. arrange for ultrasound anomaly scan between 18- 20 weeks or immediately if presenting after 20 weeks

Note that if:

- the Zika virus test is negative and ultrasound is normal, continue routine antenatal care
- the Zika virus test is positive and ultrasound is normal, repeat ultrasound at 28 -30 weeks with careful evaluation of the newborn at birth
- ultrasound findings are abnormal investigate possible causes including: Zika virus, Syphilis, Toxoplasma, Cytomegalovirus, Rubella and Herpes Simplex virus. Perform ultrasound as is necessary thereafter

The following cerebral ultrasound abnormalities are associated with Zika virus infection:

- Microcephaly
- Intracranial calcifications
- Ocular calcifications
- Ventriculomegaly
- Abnormal sulcation or gyration
- Cerebral atrophy
- Callosal dysgenesis
- Failure to visualize different portions of the brain
- Cerebellar abnormalities

- Micro-ophthalmia

In all cases with abnormal findings the woman is to be referred to a facility that provides specialized care. Depending on the severity and certainty of the fetal brain abnormalities and associated prognosis, this could range from specialized antenatal care and serial ultrasound follow-up to monitor any progression of the abnormalities, to a discussion of the potential next steps in managing the pregnancy.

It is important to ensure that an affected pregnant woman receives accurate and evidence-based information on the prognosis of the identified abnormalities. The woman and her choice of support should be offered non-directive counselling so that she, in consultation with her healthcare provider, can make a fully informed choice regarding the management of her pregnancy. Women must receive appropriate care and support to manage anxiety, stress and the birth environment.

Plans for care and management of the baby soon after birth should be discussed with the parents during the pregnancy, in consultation with a paediatrician or paediatric neurologist where available.

Prevention of infection in pregnant women is exactly the same as that recommended for the general population; however, the importance of prevention measures should be emphasized because of the impact of this infection in pregnant women. Healthcare professionals should promote the following measures, both in the community and with pregnant women and their families:

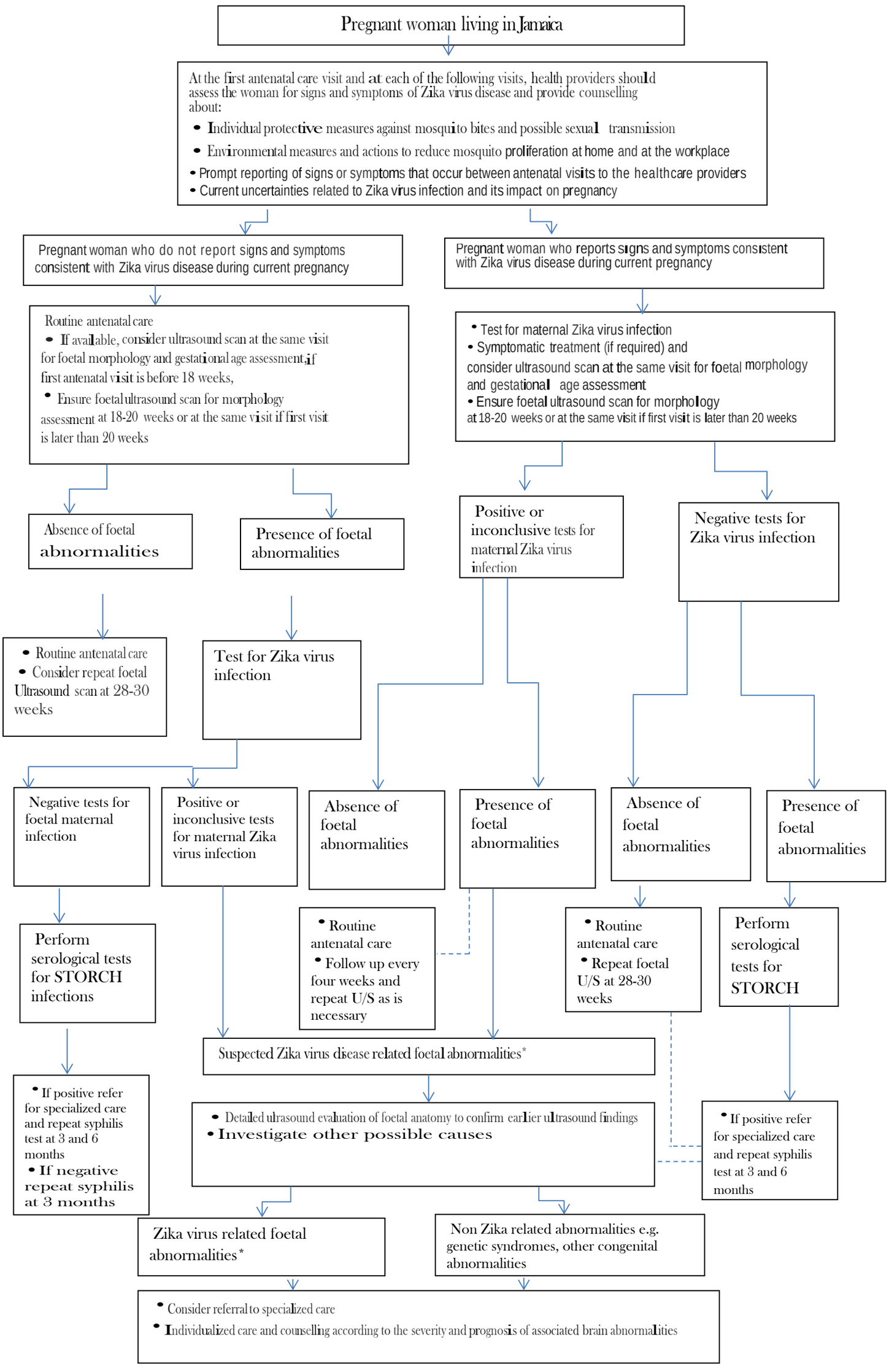
- Vector control activities - eliminate breeding sites in and around the home, workplace, church and school by preventing water build-up in containers outside and around dwellings (in flower pots, bottles, and containers where water can accumulate); cover domestic water tanks; avoid accumulating garbage (deposit it in closed plastic bags and use closed containers); and unblock drains to prevent stagnant water

- Personal protective measures: People should wear clothing that minimizes skin exposure (trousers and long sleeves). They can also use repellents authorized for human use, such those containing DEET (N, N-Diethyl-3-methylbenzamide), IR3535 (3-[N-acetyl-N-butyl]-aminopropionic acid ethyl ester) or Icaridin (1-piperidinecarboxylic acid, 2-(2-hydroxyethyl)-1-methylpropylester), which can be applied to exposed skin or clothes, and should be used in strict accordance with the instructions on the product label. There is no evidence to restrict use of these repellents by pregnant women provided that they use them according to the instructions on the product label

- Patient isolation: Mosquito nets and use of insect repellants as well as protective screens in doors and windows is highly recommended. These measures are intended to prevent infected people,

during the first week of the disease (viremic phase), from being bitten by uninfected mosquitoes that could become new transmitters of the disease.

DECISION-CHART FOR THE CARE OF PREGNANT WOMEN LIVING IN JAMAICA



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