

**TOXOPLASMOSIS AND PREGNANCY****Alellou Firdaousse\*, Azerki M., Chraibi A., Jeraf N., Bezad R., Alami M. and Filali A.**

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**\*Corresponding Author****Alellou Firdaousse**Maternity of Orange Trees,  
Rabat, Morocco.**SUMMARY**

Toxoplasmosis is a cosmopolitan parasitosis, widespread in humans and animals, caused by the intracellular protozoan *Toxoplasma gondii*. In pregnant women, vertical transmission to the fetus is one of the major consequences of infection with *Toxoplasma gondii*. Although rare, congenital toxoplasmosis can cause severe neurological or eye disease (leading to blindness), as well as heart and brain abnormalities. Prenatal care should include educating patients about the prevention of toxoplasmosis.

**KEYWORDS:** toxoplasmosis, pregnancy, screening, prenatal diagnosis, fetal therapy.**INTRODUCTION**

Toxoplasmosis is a disease most often benign, even asymptomatic. It is nevertheless responsible, in its congenital form, of sometimes severe fetal and neonatal damage.

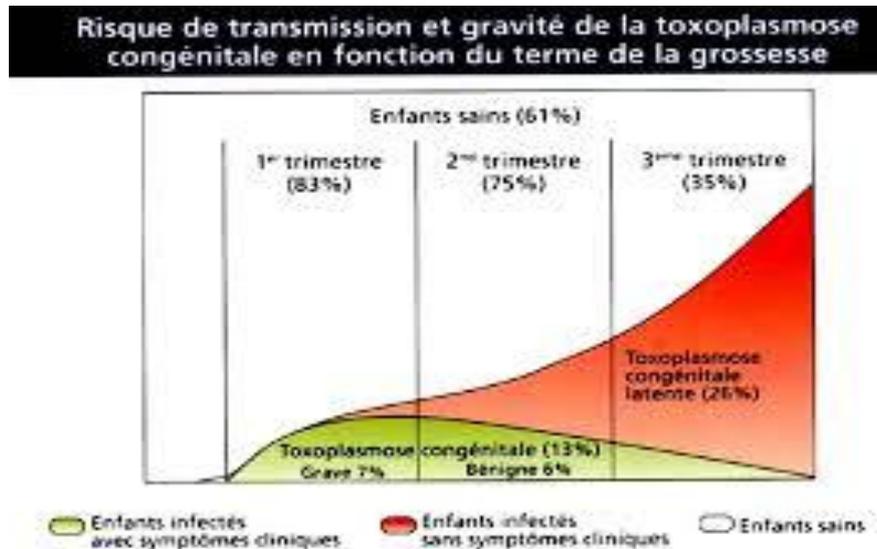
**Pathophysiology**

Primary infection: migration of the infesting form from the digestive tract to the whole organism: hematogenous and lymphatic route. The parasite is never eliminated: persists in the form of intracystic bradyzoite (reactivation if ID). Maternal-fetal transmission is determined by the transplacental passage of the parasite during a maternal parasitaemia.

**Vertical transmission during pregnancy**

Transmission from the mother to the placenta probably occurs at the time of the parasitaemia, that is, at the very beginning of the infection, when the mother is asymptomatic. The passage of the parasite from the placenta to the fetus can be longer and more random, the placenta here playing its role of filter by delaying this passage. The risk of vertical transmission increases with gestational age, ranging from 6% at 13 weeks to 72% at 36 weeks. In addition

to gestational age, it appears that many factors influence the severity of fetal damage, such as maternal immune response, type and virulence of the parasitic strain. An infected fetus is not necessarily symptomatic on ultrasound. It is estimated that nearly 80% of infected fetuses in the first trimester will be symptomatic on ultrasound, compared to about 20% in the second trimester and none in the third trimester.



### Acquired toxoplasmosis

Asymptomatic forms: Very common (80%) The diagnosis is serological. Posterior cervical lymphadenopathy sometimes a fever, asthenia, cutaneous rash the evolution is spontaneously resolved Disseminated Toxoplasmosis is rare: myalgic, cardiac, ocular forms.

### Congenital toxoplasmosis

Clinical damage is observed in less than a third of cases of congenital toxoplasmosis. The manifestations are all the more serious the earlier the fetal contamination was. Impairment in early pregnancy: medical indication for termination of pregnancy. The clinical expression is variable depending on the date of contamination. Early contamination: death in utero, premature delivery, term birth: fatal necroticohemorrhagic multisystem toxoplasmosis. Contamination of the 2nd half leads to neonatal neuro-ocular damage, meningoencephalitis, hydrocephalus or more rarely microcephaly, tone disorders and chorioretinitis, which may be associated to a microphthalmia, a cataract. The evolution is often pejorative: psychomotor delay and serious sequelae.

### Maternal seroconversion diagnosis

The diagnosis of maternal toxoplasmosis is based on the demonstration of seroconversion.

The biological tools used are the determination of IgG and IgM and the measurement of the avidity of specific IgGs.

The detection and determination of immunoglobulins depend on the methods used by the different laboratories. The 're IgM appear in a few days and peaked two to three months and then decline. They can, however, remain present for several months or even years.

IgG appear in the first weeks of infection. Their rate will quickly rise, peak in two to three months, and remain positive for life.

IgG-antigen binding becomes more refined over time in terms of specificity and therefore strength. It is the stringency of this antigen-IgG association which is estimated by measuring the avidity. It is expressed as a percentage or fraction. The higher this value, the older the infection. The thresholds are defined by the laboratory and change according to the techniques used.

In utero diagnosis: Seroconversion between 6 and 36 weeks, ultrasound data, modification of treatment, amniotic fluid sampling ++ (18 weeks): cell culture, PCR, ultrasound +++, fetal brain MRI.

Tableau 1. Signes échographiques évocateurs d'atteinte foétale.	
Système nerveux central	Microcéphalie Dilatation ventriculaire ± hydrocéphalie Calcifications intracérébrales Atrophie cérébrale
Placenta	Placenta épais Calcifications
Autres	Calcifications hépatiques Ascites Épanchement péricardique Épanchement pleural Hépatomégalie Intestin hyperéchogène

Neonatal and postnatal diagnosis is indicated in the case of a child born to a mother with toxoplasmosis during pregnancy, in utero diagnosis uncertain, treatment? Means: serology at

one year, on placenta (PCR, cell culture, inoculation)

### **Management of maternal seroconversions**

Once maternal seroconversion is diagnosed, there are schematically two types of *in utero* treatment . Treatment considered preventive of the transplacental passage of the parasite and treatment considered curative once the diagnosis of fetal infection has been made.

### **Preventive treatment**

It is based on spiramycin at a dose of 3 million IU, three times a day. It is started upon diagnosis of maternal seroconversion and continued until childbirth. This is a purely parasitostatic treatment.

### **Cure**

This treatment is conventionally offered when the PCR is positive. This is a parasitocidal treatment aimed at limiting the signs of infection and their consequences in the unborn baby. It is composed of

- pyrimethamine 50 mg / day;
- sulfadiazine 3 g / d;
- folic acid 50 mg twice a week to limit the toxic effects of pyrimethamine.

This regimen is that recommended by the World Health Organization. Its usefulness has not been demonstrated and is based on a presumption of usefulness. Maternal tolerance is however uncertain, responsible for nausea, vomiting, damage to blood lines.

### **Indication**

Positive pregnant woman: no follow-up

- Negative pregnant woman:
    - Monthly serology until delivery
    - Hygienic-dietetic rules
  - If periconceptional seroconversion: ultrasound + spiramycin
- Seroconversion 6 to 36 WA: echo + spiramycin + antenatal diagnosis
- spiramycin: prevent the placental passage of the parasite
  - Intolerance: roxithromycin Rulid®
  - Seroconversion after 36 WA: echo + PYR-Sulfa
  - Maintained until delivery in the absence of signs of fetal damage

Documented fetal infection PYR 100mg / d / 2d then 50 mg / d + sulfadiazine 100 mg / kg / d in 2 doses (max dose 4g / d) + folic acid 15-20 mg / d (1 week after PYR)

- Duration: until childbirth
- At birth:
  - Clinical and neurological assessment (OF, ETF ...) - Biology: serology + placenta
  - If no arguments: no processing

## Prevention

Primary prevention measures

Thoroughly cook the meat (beef, mutton, pork, horse) to at least 65 ° C throughout the thickness. Avoid the consumption of smoked, marinated or grilled meats.

- When preparing meals: wash vegetables and aromatic plants thoroughly, especially if they are soiled or eaten raw. Thoroughly wash the worktop and kitchen utensils. Wash hands after contact with vegetables, fruits, raw meats, and before eating.
- For meals taken away from home: avoid consuming raw vegetables and prefer cooked vegetables. Meat should be eaten well cooked or prefer poultry or fish.
- Avoid contact with objects that could be contaminated with cat feces (litter boxes or soil) and wear gloves when handling these objects. Disinfect cat litter boxes with bleach.
- Avoid direct contact with soil and wear gloves when gardening. Wash hands after gardening activities, even when using gloves.

## CONCLUSION

Toxoplasmosis is an evolving field. The incidence is falling, the place of prenatal treatments is a subject of research. So far, the strongest argument in favor of screening is the fact that congenital toxoplasmosis continues to cause severe disabilities in the United States and South America where no screening takes place.

**Links of Interest:** The authors have no links of interest related to this article.

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