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Perspective

Pregnancy and Parasites: The Prevalence of *Toxocara* Species

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DESCRIPTION

Toxocara spp., a genus of parasitic nematodes, includes species such as *Toxocara canis* and *Toxocara cati*, which primarily infect dogs and cats, respectively. However, these parasites can also infect humans, leading to a condition known as toxocariasis. Toxocariasis is of particular concern in vulnerable populations, including pregnant women, due to potential health implications for both the mother and the developing fetus. This article examines into the seroprevalence of *Toxocara* spp. in pregnant women, exploring the factors contributing to infection, the potential risks involved, and the broader implications for public health.

Toxocara spp. infections occur when humans ingest embryonated eggs from contaminated soil, water, or food, or through contact with infected animals. In humans these eggs hatch into larvae that can migrate through various tissues, including the liver, lungs, and even the central nervous system, causing a range of clinical manifestations. These can vary from asymptomatic infections to more severe forms, such as visceral larva migrans and ocular larva migrans. For pregnant women, the implications of such infections are particularly concerning, given the potential for adverse pregnancy outcomes. Seroprevalence studies, which measure the presence of specific antibodies in the blood, provide insights into the extent of *Toxocara* spp. infections within a population. In pregnant women, seroprevalence data can indicate both the current and historical exposure to the parasite. Various studies conducted globally have reported varying seroprevalence rates, reflecting differences in environmental factors, socioeconomic status, and public health practices.

Research indicates that seroprevalence rates of *Toxocara* spp. among pregnant women can be alarmingly high in certain regions. For instance, studies in developing countries often report higher rates due to factors such as poor sanitation, close contact with domestic animals, and limited access to healthcare. In some rural areas, where soil contamination and stray animals are common, seroprevalence rates can exceed 30%. Conversely, developed countries with stringent public health measures tend to report lower rates, typically below 10%. However, even in these regions, pockets of high seroprevalence can exist, particularly in socioeconomically disadvantaged communities.

Several factors contribute to the seroprevalence of *Toxocara* spp. in pregnant women. Environmental conditions play a significant role, as the eggs of *Toxocara* spp. thrive in warm, moist soil. Areas with poor waste management and high stray animal populations are particularly prone to contamination. Socioeconomic factors also influence seroprevalence, with lower-income populations at greater risk due to limited access to clean water, adequate sanitation, and healthcare services. Additionally, cultural practices, such as the use of untreated animal manure in agriculture or the consumption of raw or undercooked meat, can increase exposure to *Toxocara* spp. eggs.

The health implications of *Toxocara* spp. infections in pregnant women extend beyond the immediate effects on the mother. There is a growing body of evidence suggesting that toxocariasis during pregnancy may be associated with adverse outcomes such as preterm birth, low birth weight, and developmental delays in the child. The mechanisms underlying these outcomes are not fully understood, but it is hypothesized that the systemic inflammatory response triggered by the migrating larvae could play a role. Furthermore, the potential for transplacental transmission, although rare, raises additional concerns about the direct impact on the fetus.

Despite the significant seroprevalence of *Toxocara* spp. in some populations of pregnant women, awareness and screening for toxocariasis remain limited. Routine prenatal care typically does not include serological testing for *Toxocara* spp., even in high-risk areas. This oversight can lead to undiagnosed and untreated infections, potentially exacerbating the health risks for both mother and child. Increasing awareness among healthcare providers and integrating serological testing into prenatal screening protocols could improve detection and management of toxocariasis in pregnant women. Preventive measures are important in reducing the seroprevalence of *Toxocara* spp. among pregnant women. Public health initiatives aimed at improving

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sanitation, controlling stray animal populations, and educating communities about the risks and prevention of toxocariasis can have a significant impact. For pregnant women, specific recommendations include practicing good hygiene, avoiding contact with soil that may be contaminated with animal feces, and ensuring that pets are regularly dewormed and kept away from areas where food is prepared or consumed.

In conclusion, the seroprevalence of *Toxocara* spp. in pregnant women varies widely across different regions and populations, influenced by a range of environmental, socioeconomic, and cultural factors. The health implications of toxocariasis during pregnancy, coupled with the potential for adverse outcomes in the developing fetus, underscore the need for increased awareness, improved screening, and targeted preventive measures. By addressing these issues through comprehensive public health strategies, it is possible to reduce the burden of *Toxocara* spp. infections and improve health outcomes for both mothers and their children.