

# TOXOPLASMOSIS IN NORTHERN IRELAND 1982-83

by

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## SUMMARY

During 1982-83, 1161 sera were examined for the presence of haemagglutinating antibodies against *Toxoplasma gondii*. The Indirect Haemagglutination Test (IHAT) was positive in 416 (35.8%). Fourteen patients were judged to be suffering from acute acquired toxoplasmosis (active disease). In addition, 11 patients were also found to have glandular fever.

## INTRODUCTION

Toxoplasmosis is one of the most prevalent diseases of man. Infection presents clinically in many guises and is rarely diagnosed in the acute form. Isolation of the causative agent, *Toxoplasma gondii*, is a cumbersome procedure, and serology provides the easiest means of diagnosis. The reference serological test is the Sabin-Feldman Dye Test, but this requires the use of live *Toxoplasma* parasites and is only carried out in certain reference centres. However, the Indirect Haemagglutination Test (IHAT) is a simple serological test with high sensitivity and specificity, requiring the minimum of equipment, and does not depend on the use of live parasites. Haemagglutinating antibodies persist for many years and are particularly useful for epidemiological surveys of the disease. This paper is a report of the incidence of *Toxoplasma* antibodies contained in sera submitted to this laboratory during 1982-83.

## PATIENTS

1161 sera were sent to this laboratory from various centres throughout the Province during 1982-83. The patients supplying samples included cases of non-specific lymphadenopathy (285), of ocular disease (180), of suspected congenital infection (51), of neoplasia (18), and a group of other varied diagnoses (477); specimens were also received from pregnant women (40). Unfortunately, with a significant number of specimens (110), no clinical history was provided.

## METHODS

Sera were stored at -20°C until tested. IHAT examinations were carried out on a weekly basis. Suspicious sera were sent to the Scottish *Toxoplasma* Reference Laboratory at Raigmore Hospital, Inverness, for confirmatory tests. The antigen used in the test was a water-soluble lysate of the RH strain of *T. gondii*. Sheep red blood cells were sensitised with this antigen.<sup>1</sup> The sensitised cells were kindly supplied by the Scottish *Toxoplasma* Reference Laboratory. The test was carried out in microtitre plates according to the method adopted by the Reference Laboratory. Titres  $\geq 32$  were considered positive for *T. gondii* antibodies. Positive and negative control sera were included in every batch of tests. Patients whose clinical history

coupled with the result of the IHAT suggested the possibility of an acute infection were subjected to further tests. These included the Sabin-Feldman Dye Test and the specific anti-toxoplasma IgM Test. A patient showing a four-fold rise in titre and/or the presence of specific anti-toxoplasma IgM was diagnosed as having acute toxoplasmosis.

## RESULTS

The Table shows the results of IHAT tests in various categories of individuals. IHAT antibodies were present in 416 (35.8%) of the 1161 sera examined. The serological pattern obtained in 14 cases suggested active disease. Of 285 specimens received from patients with non-specific lymphadenopathy, there were 8 patients judged to have active disease (7 males, 1 female). In patients presenting with ocular disease, 96 out of 180 specimens submitted were positive, but only one patient showed serological evidence of active disease.

TABLE  
*Results of IHAT\* in suspected cases of toxoplasmosis*

<i>Category</i>	<i>No. Received</i>	<i>No. Positive**</i>	<i>% Positive</i>
Lymphadenopathy	285	86	30.2
Ocular disease	180	96	53.3
Suspected congenital infection	51	14	27.5
Pregnant women	40	15	37.5
Neoplasia	18	13	72.2
Other diagnoses	477	163	34.2
Diagnoses not given	110	29	26.4
<b>Total</b>	<b>1161</b>	<b>416</b>	<b>35.8</b>

\*IHAT = Indirect Haemagglutination Test

\*\*These include 14 patients diagnosed as having acute toxoplasmosis who presented with lymphadenopathy (8), ocular disease (1), non-specific signs and symptoms (4), and pregnancy (1).

Fifty-one specimens were submitted with a history of suspected congenital infection of which 14 contained antibodies to *T. gondii*. Fifteen specimens out of 40 submitted from pregnant women also showed positive serology. Eighteen specimens were examined from patients suffering from neoplastic disorders and 13 proved to be positive. The largest number of specimens (477) were received from patients with clinical diagnoses not falling into any of the above groups. Of these, 163 were positive. A significant number of specimens (110) were submitted without any clinical history. Twenty-nine of these were positive.

## DISCUSSION

A total of 1161 specimens were received during 1982-83, of which 416 (35.8%) contained antibodies to *T. gondii*. Only 14 active cases of toxoplasmosis were diagnosed, but strict criteria were applied to these cases. Eight of the active cases had presented clinically with non-specific lymphadenopathy. Six were aged 15-34

years. In a number of these cases the diagnosis was only suspected after examination of a lymph node biopsy. Histological examination of biopsy material is extremely helpful in many cases of patients presenting in this manner. During the period of the survey, only one patient was diagnosed serologically as having active ocular disease due to *T. gondii*. This may be somewhat misleading, since active disease occurring within the eye is not usually accompanied by significant changes in serum titres to *T. gondii*. It has even been suggested by Desmouts<sup>2</sup> that comparison of titres obtained from the aqueous humour and serum need to be carried out before serology is of help in diagnosing ocular disease. Nevertheless, serology can be helpful if it can exclude the possibility of toxoplasmosis.

One woman was diagnosed as having acquired active toxoplasmosis while she was pregnant. The baby was born uneventfully, and follow-up examination has so far revealed no abnormality. Four other cases of active disease were diagnosed in patients presenting with various non-specific signs and symptoms.

Because the IHAT method involves the use of non-sensitised sheep cells as a control, it makes it possible to detect those patients who have heterophile antibodies present in their blood. This enabled us to diagnose 11 acute cases of glandular fever, which were not suspected clinically, while examining the sera for toxoplasmosis. It is worthwhile remembering that in a patient who presents with lymphadenopathy and who is Paul Bunnell negative, the possibility of toxoplasmosis should not be overlooked. The results so far suggest that toxoplasmosis is not uncommon in the Province but that many active cases remain undiagnosed. A higher level of suspicion is required by clinicians when considering the diagnosis, and the serum specimens should be taken as early as possible in the illness. The value of a repeat specimen cannot be underestimated when trying to diagnose active disease.

I would like to express my gratitude to Dr. B. Bennett, Mr. W. R. Henry and Mrs. E. McKimm, who have been actively involved in providing this service for the diagnosis of toxoplasmosis. In addition, I must mention the marvellous support, both active and passive, received from Drs. H. and K. A. B. Williams and their staff at Raigmore Hospital, Inverness.

#### REFERENCES

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