SCREENING OF INTERNATIONALLY ADOPTED CHILDREN

H.M. Lenicker, P. Vassallo Agius, A.V. Portelli, M. Dalmas

ABSTRACT

Currently, we have no local generally agreed guidelines for the examination of children adopted overseas. Out of 163 adopted children, who were brought into Malta between January 1991 and June 1992, 140 (86%) were seen at the children's Outpatient Department, St. Luke's Hospital. They were clinically examined and screened for hepatitis, H.I.V. infection, syphilis and tuberculosis. The results obtained showed that screening revealed important illness in a considerable number of these children. Standardised mandatory screening tests should be introduced for all internationally adopted children.

Keywords: *Screening, Hepatitis, HIV, Syphilis, Tuberculosis, Adoption.*

INTRODUCTION

It is reckoned that about 8% of Maltese couples are childless. There is a large demand to adopt children, preferably young infants. The number of Maltese born children who are available for adoption is small and insufficient to meet this demand. Table I shows the number of Maltese born children who were adopted between 1980 and 1992.

TABLE I - *MALTESE-BORN CHILDREN ADOPTED BY MALTESE COUPLES*

YEAR	NUMBER
1980	16
1981	17
1982	14
1983	21
1984	17
1985	6
1986	14
1987	22
1988	16
1989	12
1990	6
1991	12
1992	1

Source: *Mr.A. Zammit Montebello*
Ċentru Ħidma Soċjali

Because of difficulty in adopting local born children, several parents have had to try their luck overseas. Table II shows the number of children who were brought to Malta for adoption from various countries between 1990 and 1992, both years inclusive. It will be seen that a large proportion of the children were brought over from Rumania.

TABLE II - *CHILDREN ADOPTED FROM OVERSEAS BY MALTESE COUPLES*

COUNTRY	1990	1991	1992	TOTAL
ALBANIA	-	-	2	2
AUSTRALIA	-	1	-	1
BRAZIL	3	-	-	3
ENGLAND	1	7	3	11
INDIA	-	1	-	1
PAKISTAN	-	2	-	2
PERU	-	1	1	2
RUMANIA	-	84	54	138
TOTAL	4	96	60	160

Source: *Mr. A. Zammit Montebello*
Ċentru Ħidma Soċjali

H.M. Lenicker, MD, DSc, DCH
Consultant, Paediatric Department
P. Vassallo Agius, MD, DCH, FRCP
Director, Paediatric Department
Karen Grech Hospital, G'Mangia.

A.V. Portelli, MD, MSc, Dip. Bact.
Department of Microbiology
M. Dalmas, MD
Health Information Unit
St Luke's Hospital, G'Mangia.

Disturbing reports appeared in the medical literature by early 1990 about the spread of blood borne diseases mainly HIV and HBV infections caused by unscreened blood transfusions and by the use of inadequately sterilised needles and syringes in Rumanian Institutions[1,2]. As a result, a programme which included screening for the above mentioned diseases was adopted at the Children's Department of St. Luke's Hospital for internationally adopted children.

By April 1991 four children from Rumania were found to be HBV positive and one child was found to be HIV positive. A letter of concern was written to the Department of Health suggesting that the Department of Welfare, agencies arranging overseas adoptions and would-be parents be informed of the possibility of adopting a child with an infectious disease. As a result of this letter, would-be parents were advised to be counselled by a paediatrician of their choice so that they could be appropriately informed before proceeding abroad. They were also encouraged to bring the adopted child to be examined and screened after arrival in Malta.

AIMS AND MATERIAL

The first aim of this paper is to draw attention to the fact that internationally adopted children constitute a special population which may include children harbouring silent but important diseases or states which are not detected by ordinary clinical examination alone, but which require special and reliable screening methods for their detection.

The second aim is to recommend guidelines so that all concerned with the medical evaluation of such children ensure that these children be properly screened.

One hundred and forty children were brought to the children's outpatient department of St. Luke's Hospital for examination. Most were brought by their parents. Very few were referred by their family doctors. The number consisted of 138 children from Rumania, one from Albania and one from India.

Very little information could be obtained for recording the previous medical history. Immunisation records tended to be incomplete. The children were weighed and measured and a clinical examination and developmental assessment were carried out. Except for signs of malnutrition in children who had recently arrived, findings were unremarkable.

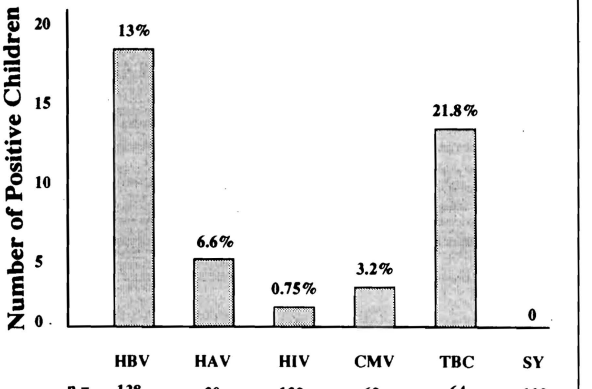
X-rays of the chest were carried out. Blood was examined for anaemia, hypothyroidism and screened for the following infectious diseases:

- *Hepatitis Viruses*
- *Human Immune Deficiency Virus*
- *Cytomegalovirus*
- *Syphilis*

A tine test to determine tuberculin reactivity was also carried out.

This presentation will limit itself to the findings (Table III) of our screening for the above mentioned infectious diseases. In this regard, no abnormalities were found in the child from Albania nor in the child from India. Therefore, the report solely concerns the abnormal findings in some of the children from Rumania.

TABLE III - *POSITIVE FINDINGS IN SCREENING CHILDREN ADOPTED FROM RUMANIA : MALTA 1990 - 92*



HEPATITIS B INFECTION

Laboratory tests were carried out using E.I.A. methods.

Out of a total of 138 children, 18 were identified, by carrying out a Hepatitis profile, to have markers which were indicative of Hepatitis B infection. This diagnosis was supported by the concurrent finding of raised alanine aminotransferase levels in the serum.

Although these patients were being followed up by different paediatricians, arrangements were made so that their parents were invited to bring them all to the children's outpatient department at St. Luke's Hospital in September 1992 so that

their Hepatitis B infection status could be reviewed. This was done by repeating the Hepatitis profile and the liver function tests.

The result of this exercise is shown in Table IV.

This result was confirmed by repeating the enzyme immunoassay and by the immuno blot tests and the discriminatory HIV 1 and 2 tests showed that the infection was caused by HIV 1.

TABLE IV - *ADOPTED CHILDREN FROM RUMANIA : REVIEW OF 18 CASES OF HEPATITIS B. AUGUST - SEPTEMBER 1992.*

Number of Children	HBsAg	HBe	anti - HBe	anti - HBs	Liver Enzymes
5	+	+	-	-	▲
6	+	-	-	-	▲
2	+	-	+	-	▲
5	-	-	+	+	▼

Five of the 18 children were still HBSAG and HBE positive, had no anti-HBS in the serum and they had raised serum alanine aminotransferase levels. These findings suggested that they were chronic carriers and that they could have chronic active hepatitis.

Eight of the 18 children were still HBSAG positive, had no HBE and no anti-HBS in the serum, two had anti HBE and all had raised alanine aminotransferase levels. These children were considered to be chronic persistent carriers.

The remaining five children no longer were HBSAG and HBE positive, anti-HBE and anti-HBS were present in the serum, and alanine aminotransferase levels were within normal limits. These children were considered to have recovered clinically and also to have acquired natural immunity.

HEPATITIS A INFECTION

Out of a total of thirty children tested by enzyme immunoassay for serologic markers of Hepatitis A virus, anti-HAV IGM antibodies were found in two children. This suggested recent infection.

HIV INFECTION

Routine HIV testing is not generally recommended. However, as most of the adopted children were from Rumania, where high HIV infection rates were being reported, it was therefore considered essential to screen for this disease. Permission of the adoptive parents was obtained. This screening resulted in finding that one of the children, a two year old girl, besides having hepatitis B infection, was also HIV positive. Clinically this child was afebrile and quite well nourished but she had persistent generalized lymphadenopathy and splenomegaly. She also suffered for some weeks from a generalized pruritic dermatitis. The persistence of HIV antibodies beyond 18 months (she is now 3 years), means that she is infected. It was considered that she had stage P-2A of the disease. Tests for cytomegalovirus, infectious mononucleosis and tuberculosis were negative.

The child is being followed up clinically and her cellular markers are being followed at 3 monthly intervals.

CYTOMEGALOVIRUS

Only 2 of the 62 children had CMV IGM antibodies.

TUBERCULIN REACTIVITY

Out of 64 children tested, 14 had varying degrees of positivity to the Tuberculin Tine Test but without induration. Verification of previous BCG vaccination with normal chest X-rays showed that none of these children required treatment.

SYPHILIS

The venereal disease reference laboratory test for syphilis was carried out in 112 of the 140 children (81%). No positive results were reported.

EXAMINATION OF THE STOOLS

This did not form part of our screening.

However, two of the children from Rumania passed Ascaris Lumbricoides which is unusual in local children.

DISCUSSION

Our recent encounter with a wave of internationally adopted children has served to highlight the fact that this special group of children requires screening for infectious diseases or carrier states which may not be revealed by clinical examination alone.

This has been recently pointed out by Hostetter, Johnson and others in contributions in the American Journal of Diseases of Children [3], in Paediatrics [4], and in the New Eng. J. of Med. [5] Moreover, guidelines were published by the American Committee on early childhood, adoption and dependent care in the Journal of the American Academy of Paediatrics. [6] We would like to add our comments following our experience with recent adoptions of overseas children and to make our recommendations.

We believe that before proceeding overseas, prospective parents should be made aware of the increased risks of adopting a child suffering from serious infections such as HBV or HIV.

The prospective parents are advised to bring the child for review of immunization status, clinical and developmental assessment and screening shortly after arrival. Screening tests for anaemia, hepatitis, HIV infection, CMV, tuberculosis, syphilis and intestinal parasites are recommended. Where appropriate, screening for hypothyroidism, phenylketonuria and thalassaemia or other abnormal haemoglobinopathies should also be advised as well as malaria. Arrangements for eventual formal visual and hearing tests and a psychological assessment should be made (Table V).

TABLE V - *PLAN OF ASSESSMENT OF INTERNATIONALLY ADOPTED CHILDREN.*

History		*Immunization Status*
Physical and Developmental Assessment		
Screening		
CBC	HBV	HIV
CMV	VDRL	TB
Stools for Parasites		Urinalysis
		Malaria
Hypothyroidism	PKU	Thalassaemia
		Abnormal Haemoglobins
Hearing	Vision	Developmental Assessment

Abnormal findings may call for intervention. In the case of Hepatitis B infection, household contacts should be educated about environmental and personal hygiene and should receive Hepatitis B vaccine. The parents of the adopted child with HBV infection should be strongly advised of the need for the on-going clinical and laboratory follow up which is necessary for following the carrier states and to watch for the possible development of chronic active hepatitis, cirrhosis and hepato-cellular carcinoma for which these children have increased risk. [7]

The management of the child found to be suffering from HIV infection will depend on the stage of the disease. In all instances, close follow up in a multi-disciplinary setting is necessary with prevention of infections by prophylaxis, vaccination, prompt treatment of bacterial and opportunistic infections, and if necessary, early nutritional support to prevent failure to thrive.

If the adopted child has active CMV infection, sero-negative mothers are at risk. Should they acquire primary infection during a pregnancy, the adoptive mother may transmit the virus to her foetus with the risk of severe mental and physical sequelae. [4] Advice should be given about the transmission of CMV in the urine and saliva of the child and about personal hygienic precautions.

With regard to Tuberculin Testing, the Tine Test is now considered to be inadequate by many authorities and instead the Mantoux 10 TU Intradermal Test is recommended. If this is positive, 10 mm with induration, in the absence of previous vaccination with BCG, a chest X-ray and further follow up and specific treatment are indicated.

Intestinal parasites are commonly found in children adopted from less fortunate parts of the world. A search for parasites in the stools should form part of any routine screening programme of internationally adopted children.

CONCLUSION

Internationally adopted children constitute a special group who may have silent but important diseases which require directed screening tests for their diagnosis.

All those concerned with the welfare of these adopted children and of their parents should be aware of these problems and of the ongoing care which is sometimes necessary.

References

1. Apetre AR. Children with AIDS, Readers' Forum. World Health Forum 1990; II:199
2. Dublanchet A. HIV-1 Infection in Rumanian children. The Lancet 1990; 335:672
3. Hostetter MK, Johnson DE. International adoption. Am J Dis Child 1989; 143:325-332
4. Hostetter MK, Iverson RN, Dole K, Johnson D. Unsuspected infectious diseases and other medical diagnosis in the evaluation of internationally adopted children. Paediatrics 1989; 83:559-564
5. Hostetter MK et al. Medical evaluation of internationally adopted children. The New Eng J Med 1991; 325, No. 7:479-484
6. Wender E, Chang A. Initial medical evaluation of the adopted child. Committee on Early Childhood, Adoption and Dependent Care. Paediatrics 1991; 88, No. 3:642-644
7. Hershow RC et al. Adoption of children from countries with endemic hepatitis B: transmission risks and medical issues. The Paed Infec Dis J 1987; 6:431-437