

Received 17th May 2003. Accepted for publication in final form 9th August 2003.

From the Department of Family & Community Medicine, Faculty of Medicine, University of Jordan, Amman, Jordan. Address correspondence and reprint requests to Dr. Farouk M. Shakhateh, Associate Professor and Head, Department of Family & Community Medicine, Faculty of Medicine, University of Jordan, PO Box 13046, Amman 11942, Jordan. Tel. +962 (6) 535 5000 Ext. 2438. Fax. +962 (6) 5355599. E-mail: farouk3000@hotmail.com

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Does tuberculin skin test predict tuberculosis in patients with end-stage liver disease?

Mohamed Al-Moamary, MD, MRCP(UK),

Salah Al-Baz, MD, Adel Alothman, MD, FRCPC,

Ziad Memish, MD, FRCPC, Hamdan Al-Jahdali, MD, FRCPC,

Abdulmajeed Al-Abdulkareem, MD, FRSC.

The incidence of tuberculosis (TB) after solid organ transplantation has been reported to be between 1-4%. As a screening test for TB, tuberculin skin test (TST) has been utilized in cases evaluated for liver transplantation (LT). A recent study reported that 16.8% of LT candidates in the period from 1988-1998 had positive TST, and TB was reported in 1% of cases who underwent an LT. Tuberculosis is known to complicate LT, as LT has unheralded risk factors for the development of TB as of possible reactivation of latent infection or primary TB in immunosuppressed host. Despite the increasing risk of active TB in transplanted patients, there is no consensus regarding the appropriate treatment of asymptomatic TB infection in this category. The Kingdom of Saudi Arabia (KSA) is a country with an intermediate prevalence of TB. In a nationwide community survey of TB epidemiology in KSA, the prevalence of a positive TST among the Saudi population was 30%. In this setting, the action based on a TST in end-stage liver disease (ESLD) is somewhat controversial.^{1,2} The objective of this paper is to study the prevalence and value of a positive TST on patients assessed for LT and the prevalence and value of a TST in cases with ESLD evaluated for LT.

We did a retrospective chart review of patients with ESLD referred for LT evaluation at the King Fahad National Guard Hospital, Riyadh, KSA. All patients evaluated in the period between 1994-1997 were studied. The inclusion criteria are 1. Patients with ESLD referred for LT, 2. Tuberculin skin test carried out at the time of evaluation, and 3. Follow-up period for at least 12 months or TB disease development within 12 months. Numbers were expressed as mean \pm standard deviation. Whenever there was data in 2x2 table, Chi Square was used as appropriate.

The liver transplantation program evaluated 260 patients with ESLD in the period from 1994-1997. Tuberculin skin test results were available for 160 patients (61.5 %). Forty-two patients had positive TST with a prevalence of 26.3%, while the prevalence of a positive TST in a nationwide wide survey among Saudi patients was 30% ($p=0.21$).^{4,5} One hundred and nineteen patients (74.4%) met the inclusion criteria. Of those 119 eligible patients, 31 had positive TST (26.1%). The mean age was 46.6 years (± 16.9) with a male to female ratio of 1.4:1. The etiology of liver cirrhosis was as follow: Hepatitis C virus in 77 patients (64.7%), Hepatitis B virus in 5 patients (4.2%), and others etiologies for the remaining 24 patients (21.1%). The follow-up period was 26.4 months (± 18.4). The outcome of eligible patients at the time of data analysis was as follows: 45 (37.8%) were transplanted, 50 (42%) had not yet have the transplantation, and 24 (20.2%) died while on the waiting list. Among the 45 patients who underwent LT, 15 (33.3%) had a positive TST. Of the 75 patients who did not undergo an LT, 16 (21.3%) had a positive TST ($p=0.065$). Of the 31 patients with a positive TST, 2 (6.5%) developed tuberculosis, while the other 2 (2.3%) with negative TST developed tuberculosis. Four patients (3.4%) developed tuberculosis, one patient was transplanted, and 3 were not. Only 3 patients (9.7%) with a positive TST had isoniazid prophylaxis and one developed drug-related hepatitis.

We conclude that TB is preventable when there is a high degree of suspicion in endemic areas. Most of the cases could be diagnosed promptly with appropriate investigation. Though a TST in our study did not predict the development of TB in ESLD, it should raise suspicion for the development of TB in the future and warrant the use of TB prophylaxis after transplantation in LT candidates.

Received 15th March 2003. Accepted for publication in final form 9th August 2003.

From the Department of Medicine (Al-Moamary, Al-Baz, Alothman, Al-Jahdali), Department of Infection Prevention and Control (Memish), Department of Hepatobiliary Sciences (Al-Abdulkareem), King Fahad Hospital, King Abdul-Aziz Medical City, Riyadh, Kingdom of Saudi Arabia. Address correspondence and reprint requests to Dr. Mohamed S. Al-Moamary, PO Box 84252, Riyadh 11671, Kingdom of Saudi Arabia. Tel. +966 (1) 2520088 Ext. 4196 Fax. +966 (1) 2635128. E-mail: almoamary@yahoo.com

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The prevalence of antibodies against rubella in pregnant women in Kerman, Iran

Tahereh A. Ganjooie, MD,
 Mohammad M. Mohammadi, PhD.

Rubella is an innocuous viral infection, due to its teratogenic effects; if acquires during pregnancy, its responsible for serious fetal problems such as congenital rubella syndrome, which includes severe

disorders such as cataracts, glaucoma, blindness, deafness, cardiovascular disorders, bone lesions, blood disorders, pneumonia, encephalitis, growth retardation and chromosomal abnormalities. The involved fetus may be asymptomatic at birth and disorders such as progressive panencephalitis and diabetes occur in following years.¹ Researches from 1986 to 1997 showed that immunity against rubella in non-pregnant Iranian women was 78-97% and among pregnant women was 72-91.2%.² Vaccination against rubella is not a part of Iran's public vaccination program and therapeutic abortion in our country is illegal thus, recognition and vaccination of susceptible women seemed necessary. A cross-sectional prospective study was carried out in 1999. Anti-rubella immunoglobulin G (IgG) and IgM in the sera of 410 volunteer Iranian pregnant women were titrated by enzyme linked immunosorbent assay (ELISA). The presence of anti-rubella IgM and the amount of anti-rubella IgG by using RADIM kits (RADIM Company, Florence, Italy) was determined. Immunoglobulin G values greater than 15 mlu/ml were considered protective titer. Chi-square, t-test and Fisher exact tests were used to analysis. A *p* value of <0.05 was used as a limit of significance. The age spectrum for women was 15-48 years (average 26.5). Fifteen percent of subjects were jobholder and the remaining were housewives. Approximately 77% of women were urban residents and the rest of them were rural residents. In all subjects, anti-rubella IgM was negative, anti-rubella IgG (>15 mlu/ml) was positive in 94.6% and negative in 5.4% of cases. The average age for positive titer

Table 1 - Comparison of the presence of anti-rubella antibody based on the variable: age, occupation, place of residence and duration of marriage.

Antibody/ Variables	Negative		Positive		Total		Statistical difference
	Frequency	%	Frequency	%	Frequency	%	
Age (years)							
15-20	5	1.2	49	11.9	54	13.2	<i>p</i> >0.05
21-25	6	1.5	139	33.9	145	35.4	
26-30	5	1.2	105	25.6	110	26.8	
>30	6	1.5	95	23.2	101	24.6	
Total	22		388		410	100	
Occupation							
Housewife	15	3.7	334	81.5	349	85.1	<i>p</i> <0.05
Jobholder	7	1.7	54	13.2	61	14.9	
Total	22		388		410	100	
Place of residence							
Rural	3	0.7	90	21.9	93	22.7	<i>p</i> >0.05
Urban	19	4.6	298	72.7	317	77.3	
Total	22		388		410	100	
Duration of marriage (year)							
1-5	11	2.7	214	52.2	225	54.9	<i>p</i> >0.05
>5	11	2.7	174	42.4	185	45.1	
Total	22	5.4	388	94.6	410	100	