Potential risk factors for acquiring cutaneous leishmaniasis in a hijra in Al-Majmaah

During 1994, the director of Majmaah General Hospital noticed an increase in the number of reported cases of cutaneous leishmaniasis (CL) and requested an epidemiologic investigation. Al-Majmaah district is located 200 km to the north west of Riyadh, with a population of more than 41000. It has one general hospital and 17 primary health care centers (PHCCs).

There were 377 CL cases in Al-Majmaah district in 1994, with an overall attack rate (AR) of 9.15 per 1000 population. Omrajown had 44 cases with an AR of 110 per 1000 population, which was the highest among Al-Majmaah sub-districts. Omrajown is a hijra or bedouin village of 400 persons living in 58 single floor houses. It was founded about 27 years ago and located 120 km east of Al-Majmaah city at the western border of the Al-Dahana desert. It has no farms. The hijra has minimal population movement. We visited all of Omrajown's households and determined demographic information, clinical presentation of CL lesions and possible risk factors for CL through interviews. The case definition for CL was any person who had cutaneous lesion(s) that had been clinically diagnosed as a CL at any time in his/her life.

The first case of CL acquired in Omrajown appeared in July 1992 in a 40 year old Saudi woman followed by 54 cases through July 1994 (Figure 1).

Mean age for the CL cases ranged from 1 to 70 years (mean 19.7), and 54% of cases were in women. Forty cases (74%) were Saudis, 3 (5.5%) were Palestinians, another three were Egyptians and eight (14.8%) were of other nationalities. CL is not statistically associated with occupation. The commonest site of lesions was the lower extremities (40.6%) followed by the upper extremities (39.1%), the face (17.2%), and the trunk (3.1%). More than one lesion occurred in 28 cases (51.9%). Permanent scars were present in 98.4% of cases. Forty-nine patients (90.7%) had received chemotherapy, local healers treated two with cautery and three persons denied receiving any type of treatment.

Of the 46 houses with cracked walls, 52% had one or more CL cases compared to 8% of 12 houses with no cracked walls (p<0.05, Yates corrected Chi-square test). In the 12 houses adjacent to abandoned houses, one case or more of CL were found in nine (75%), whereas of 46 the houses not standing adjacent to abandoned houses, only 16 houses (34.8%) had one case or more of CL (p<0.05, Yates corrected Chi-square test). Screened windows, the presence of animal enclosures attached to or nearby the house, or the presence of rodents indoors or outdoors were not statistically associated with the transmission of the disease. Questioning about knowledge of leishmaniasis revealed that 94.8% of the adult residents did not know how the disease occurs, or about the role of the sandfly and rodents in transmission.

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Editorial note: Leishmaniasis is a group of infections of the viscera, skin, and mucous membranes caused by intracellular protozoan parasites of the genus transmitted by sandflies of the genus Phlebotomous in the Old World Zoonotic (ZCL) caused by Leishmania major is an increasing public health problem in the Old World, from Senegal in West Africa to the western parts of India.1 Anthroponotic CL (ACL) is caused by L. tropica and occurs in urban centers in southwest Asia.

Both ZCL and ACL occur in Saudi Arabia, particularly in the Al-Hassa region in the east, in the Asir region in the south-west and in the Riyadh region in the central part of the country.2 P. papatasi is the vector for ZCL and P. sergenti for ACL.3

In the Riyadh region, L. major, Montpellier zymodeme 26 (MON 26), has been isolated from several human CL cases, P. papatasi and from the rodent Meriones libycus.3

Reported cases of CL in the Riyadh region have gradually decreased from 1987 to 1991, when they began to increase through 1994. The same resurgent pattern has been found in the Al-Majmaah district which is a part of the region (Leishmaniasis department, MOH).

Because it is a zoonotic disease, ZCL spreads easily and is extremely difficult to control. Studies done elsewhere in Saudi Arabia have shown that CL occurs more frequently in males than in females; it is associated with working in farming areas with peak incidence in children below the age of 10 years.4 In contrast in Omrajown, there were no associations of CL with age, sex, nationality or occupation. In addition the associations between the CL and cracks in the walls of houses and abandoned houses adjacent to the cases-houses, suggest that CL in Omrajown was recently introduced and that the transmission is domestic or peridomestic.

The only control measure that had been applied was fogging with insecticides. However, new CL continued to appear. The spraying may be ineffective because a) it is frequently done at midday, a time when the sandflies are in protected resting sites; b) respraying is not done frequently giving the sandflies a chance to recover, and c) the abandoned houses are not sprayed.

Another consideration is the lack of knowledge by the community about the disease and its way of transmission. The appropriate method to control the transmission of the disease in Omrajown will be to educate the people about the disease; to spray insecticides at short intervals and at the appropriate time; do something about the abandoned houses, and to close any cracks in the walls of houses.

References:
3. Ibrahim EA, Mustafa MB, Al Amri SA, Al-Seghayer SM, Hussein SM, Gradoni L. Meriones libycus (Continued on page 5)
TUBERCULOSIS IN A PRISON, JEDDAH, SAUDI ARABIA, JULY 1993-MARCH 1995

After recognizing four extra pulmonary tuberculosis cases among prisoners hospitalized in a Jeddah hospital, an additional 40 prisoners with pulmonary TB were identified from TB surveillance between July 1993 to December 1994. An epidemiologic investigation was begun to determine the reasons for the large number of TB cases among prisoners in a prison in Jeddah.

The prison has two sections: a correctional institute and a general prison according to the crime. One clinic serves both sections of the prisons. Prisoners with suspect TB are referred to the Jeddah TB Center for chest x ray, tuberculin skin testing, and sputum examination. Those with acid fast bacilli on sputum examination or Mycobacterium tuberculosis on culture are referred to the Chest Hospitals for treatment. New prisoners had not been screened for TB.

To find cases we reviewed patients' records of the two hospitals used by the prison and the Jeddah TB Center. A pulmonary TB case was defined as a prisoner who developed a cough illness with a sputum smear positive for acid fast bacilli and extra pulmonary TB cases as an illness with TB granuloma demonstrated by histology from July 1993 to March 1995. Prisoners with TB were interviewed in the prison or Chest Hospital. From July 1993 to February 1995, 53 cases of pulmonary (49 cases) and extra pulmonary (4 cases) TB were diagnosed among prisoners (incidence rate = 456 per 100,000 per year). TB cases had been detected in the correctional institute since the beginning (July 1993) of the study period and the first seven cases had onset of illness more than one month after imprisonment (prison-acquired). In contrast, no TB cases had been discovered in the general prison during the first five months of the case review and one of the first three cases had onset less than one month after imprisonment (community-acquired). For all TB cases time between imprisonment and onset of symptoms ranged from 0 to 1162 days (median 216) and 87% were prisoners-acquired.

Referral from the prison clinic for TB diagnosis was delayed from 31 to 65 days (mean 54) after onset of cough. The risk of TB increased with crowding in the ward (Chi square for trend = 5.1, p<0.05) and time spent in prison (p<0.01, ANOVA). When compared to control prisoners selected at random from all prisoners, prisoners with diabetes mellitus (Odds ratio [OR]=16, 95% Confidence Interval [CI]7-37) and smokers (OR=2.9, 95% CI 1.1-7.9) had a greater risk of TB.

We screened 297 prisoners using chest film sputum smears and tuberculin skin testing. Prisoners were selected because they were in a ward with known TB cases or because they had a risk factor for TB (HIV positive, diabetes mellitus, chronic renal failure, hematological disorder). Twenty-six previously undetected TB cases were identified (8754 per 100,000). The mean PPD reaction was 7 mm with a range from 0-20 mm among all screened prisoners. The rate of tuberculosis positively increased with increasing months of imprisonment (R= 0.27, 95% confidence limits 0.08-0.44). Screening of guards and social workers (18) detected one guard and one social worker from the Correctional Institute with pulmonary TB.

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Editorial note: Prisons throughout the world represent a situation where risk

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Distribution of CL cases by month of onset
Omrajown town, Al Majmaah, Riyadh region, KSA 1992-1994

--- Distribution of CL cases by month of onset Omrajown town, Al Majmaah, Riyadh region, KSA 1992-1994

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