Letters to the Editor

Genetic Diseases in Saudi Arabia—A Model for National Awareness and Care Programme

Sir,


It is really a good idea to open a WHO collaborating centre for haemoglobinopathies at the Medical Biochemistry Department of KSU. Although haemoglobinins form a major share of the genetic disorders in this peninsula, aminoacidurias, porphyrias, mucopolysaccharidoses etc. also make up an unavoidable share. As there are no comprehensive protocols available for their screening, most of the cases escape diagnosis. In this regard the National Work Group can do a lot if it also includes the latter in its menu of genetic disorders to be screened at various levels. The centre can organize an in-service training to a selected group of physicians and laboratory personnel to that effect.

For the final diagnosis of the referred cases and for their follow up, a good molecular biology laboratory is of utmost importance. I hope the vast experience and extensive knowledge of Professor El-Hazmi will help to fulfill the accomplishment of such a centre for the diagnosis and management of genetic disorders in this kingdom.

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Blood Clot Culture Revisited—Isolation of Brucella Organism

Sir,

Brucellosis is a major diagnostic concern in Saudi Arabia.1 Brucella is a fastidious organism which needs prolonged incubation for isolation. Serology is an important means of making the diagnosis,2 though almost 50% of cases can be confirmed by culture.3 We used three blood clot culture techniques to recover brucellae from seropositive cases, and 18/92 grew Brucella sp.

Clinically suspected cases of brucellosis presenting with fever, malaise, headache, arthralgia and body aches were tested serologically using coloured Brucella antigens (Gamma Biological Inc., USA) with dilutions 1/20 to 1/320. Those positive at 1/320 were diluted further up to 1/5260. A Rose-Bengal slide agglutination test was performed on some sera. The blood clots of 92 seropositive cases were transferred aseptically to a sterile petri-dish, macerated and inoculated into 50 ml of Brain Heart Infusion Broth and on some occasions into 50 ml of Tryptic Soy Broth without streptomycin and incubated at 37°C. Subcultures were made on the 2nd, 4th and 7th days on blood Agar and chocolate agar, and every week thereafter for 6 weeks before discarding the sample as negative. The plates were incubated for 72 hours at 37°C in a candle extinction jar. Oxidase positive, Gram-negative coccobacilli were identified biochemically and by agglutination with monospecific antiserum. Of the 92 clot cultures, 18 (19.5%) grew Brucella melitensis (Table 1). Watson4 has described blood clot cultures for the recovery of Salmonella typhi in enteric fever. Duthie et al,5 did not find any significant rise in the yield of clot cultures by adding streptomycin.

Our rate of isolation of Brucella by clot culture vis a vis 19.5% is low compared with 51.5%6 and 69.8%7 of positive blood cultures and 66.7% of positive marrow culture.8 Unfortunately, our cases were randomly selected and some patients were partially treated when they arrived in the hospital, which might be the reason for the low recovery rate from clot cultures.

There have been controversies regarding the diagnostic titre in human brucellosis. There have been reports of significant

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References

1. The First Postgraduate Course on the Laboratory Diagnosis of Blood Genetic Disorders. 25–29 April 1993, College of Medicine, Riyadh, Saudi Arabia.
2. The First Regional Workshop on (1) Clinical & (2) Laboratory Aspects of Red Cell Genetic Disorders. 14–21 April 1993, College of Medicine, Riyadh, Saudi Arabia.
Table 1

The relationship between antibody titres and positive isolates

<table>
<thead>
<tr>
<th>Antibody titre</th>
<th>No of clot cultures</th>
<th>Positive isolates</th>
<th>%</th>
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<tbody>
<tr>
<td>1/20</td>
<td>1</td>
<td>0</td>
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</tr>
<tr>
<td>1/40</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1/80</td>
<td>15</td>
<td>2</td>
<td>2.17</td>
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<td>1/160</td>
<td>17</td>
<td>3</td>
<td>3.26</td>
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<tr>
<td>1/320</td>
<td>14</td>
<td>4</td>
<td>4.34</td>
</tr>
<tr>
<td>1/640</td>
<td>11</td>
<td>5</td>
<td>5.43</td>
</tr>
<tr>
<td>1/1280</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>1/2560</td>
<td>2</td>
<td>1</td>
<td>1.09</td>
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<tr>
<td>Rose-Bengal slide test</td>
<td>21</td>
<td>3</td>
<td>3.26</td>
</tr>
<tr>
<td>TOTAL</td>
<td>92</td>
<td>18</td>
<td>19.55</td>
</tr>
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</table>

correlation between positive blood cultures and titre of >1/320 and >1/640. Arrighi in his study found a titre of 1/160 as diagnostically significant even when not associated with a rise in the titre or a positive culture. Strong suggested a titre of 1/80 to be diagnostically significant. Ganado et al. isolated B. melitensis from the blood cultures of a patient with a titre of 1/40. Two of our seropositive cases had a titre of 1/80 from which B. melitensis was isolated and none of the nine seropositive cases with a titre of <1/80 grew Brucella, which is consistent with the findings of Kiel et al. Probably a titre of 1/80 is diagnostically significant when accompanied with clinical manifestations of the disease.

One interesting result in this study was that in 3/21 (14.3%) of cases with a positive Rose-Bengal agglutination test B. melitensis was grown. This might be a cheaper alternative in developing countries, if the result can be correlated with clinical manifestations and/or confirmed by clot or blood cultures in order to avoid unnecessary antibiotic therapy.

References