previously [2]. Three isolates recovered from the two outpatients shared PFGE type G1, clonal type ST80-IV and agr type 3, and harboured Panton–Valentine leukocidin genes. Only spa typing showed a slight genetic differentiation, reflected in spa types t044, t376 and t131, but there was a clear relationship among the isolates. According to molecular epidemiological definitions, these three isolates were classified as CA-MRSA because they possessed SCCmec type IV and were unrelated phylogenetically to HA-MRSA clonal lineages described previously [3]. The remaining isolate belonged to the Berlin MRSA clone [3], with PFGE pattern A12, clonal type ST45-IV, agr type 1 and spa type t015; the Panton–Valentine leukocidin genes were not detected. No similar strain has ever been isolated from the same hospital, and it was therefore considered that this isolate originated from the patient’s endogenous flora. However, the epidemic potential of the Berlin MRSA clone has been demonstrated in previous studies, especially in the hospital environment [2,3].

CA-MRSA isolates have recently been reported in hospital environments, where they can cause nosocomial infections. However, there are also suggestions that the increase in MRSA in the community results largely from the introduction of healthcare-associated strains into the environment [4]. Therefore, a definition of CA-MRSA and HA-MRSA based on exclusively epidemiological data might be too narrow and thus insufficient. The above findings support the overall conclusion of Kluftmans-VandenBergh and Kluftmans [1] that additional well-designed community-based studies are required that use adequate risk-factor analysis to elucidate the epidemiology of CA-MRSA and to control the spread of MRSA.

The Croatian CA-MRSA isolates were related genetically to the Mediterranean and Berlin MRSA clones described previously [5,6]. This observation, and those from other countries, have confirmed that dissemination of a single CA-MRSA clone has not occurred, but rather that CA-MRSA strains have arisen from diverse genetic backgrounds in different locations [5]. Multiple genotypes of CA-MRSA are increasingly causing community-acquired infections, and this is particularly the case for the ST80-SCCmec IV CA-MRSA (the ‘Mediterranean clone’), which has disseminated among a number of European countries [5,6].

J. Krzysztoń-Russjan, A. Tambic-Andrasevic, S. Bukovski, A. Sabat and W. Hryniewicz*
National Institute of Public Health, Warsaw, Poland
*E-mail: waleria@cls.edu.pl

REFERENCES

Evolving trends in infective endocarditis: comparison with 156 cases from the National Survey in Slovakia
10.1111/j.1469-0691.2006.01439.x

The interesting review on infective endocarditis (IE) in CMI by Hill et al. [1] discussed the changing trends in risk-factors, aetiology and mortality during the last 20 years. We reviewed 156 cases of IE between 1995 and 2002 in a single National Cardiology Institute in Slovakia with 180 beds (Table 1) and found a relatively high proportion of cases (33.3%) with staphylococcal aetiology, but a low incidence (14.5%) of cases involving Streptococcus viridans. In contrast to the observations of Hill et al. [1], no cases of Candida IE were detected, and the prevalence of neurological complications was <10% (compared with 20–40%). Comparing mortality rates, Hill et al. [1] estimated 20–25% first-year mortality, compared with only 5.8% in our cohort, perhaps because all 156 of our cases were treated with antibiotics plus cardio surgical native valve (NV) replacement (17
(12%) cases involved prosthetic valve endocarditis. In our previous study in 1991–1997 [2], cases involving surgical intervention had a significantly lower mortality rate than cases treated simply with antibiotics (13.6% vs. 24.6%; p < 0.05). Thus, early cardiosurgical intervention seems to be important in decreasing early mortality resulting from both native valve and prosthetic valve IE. In this respect, the high proportion of culture-negative cases of IE is alarming.

Table 1. Characteristics of 156 cases of infectious endocarditis from a single National Cardiology Institute in Slovakia

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Native/prosthetic valve</td>
<td>89.1%/10.9%</td>
<td>99.4%/0.6%</td>
</tr>
<tr>
<td>Aortic/mitral valve</td>
<td>49.4%/23.7%</td>
<td>47.2%/46.7%</td>
</tr>
<tr>
<td>Mortality rate</td>
<td>5.8%</td>
<td>22.2%*</td>
</tr>
<tr>
<td>Staphylococcus aureus</td>
<td>33.3%</td>
<td>33%</td>
</tr>
<tr>
<td>Viridans streptococci</td>
<td>14.5%</td>
<td>12.2%</td>
</tr>
<tr>
<td>Candida spp.</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Culture-negative</td>
<td>53.3%</td>
<td>33.3%</td>
</tr>
</tbody>
</table>

*Surgical treatment, 13.6%; medical treatment, 24.6%.

REFERENCES