In the 2015 LEADER Program, linezolid activity was shown to remain high (99.8% susceptible). The MIC breakpoint for linezolid resistance for CoNS was 16 µg/ml. Linezolid activity for MSSA was 1 µg/ml. For MRSA, the MIC breakpoint was 1 µg/ml. Resistance rates were high for MRSA for erythromycin (84.0%), levofloxacin (67.6%) and tetracycline (50.7%). The LEADER Program surveillance program monitors linezolid activity, spectrum and resistance rates for S. pneumoniae (236 isolates). Linezolid activity for this group of organisms was high (99.3%) and no resistance was observed.

Results

The LEADER surveillance program has monitored linezolid activity, spectrum and resistance rates in the United States (USA) since 2000. Molecular characterization of isolates and phenotypic breakpoints for linezolid MICs have been an integral part of this program.

Methods

A total of 6,741 Gram-positive culture isolates cultured in 60 USA (35 states) medical centers (including medical centers specializing in infectious diseases) were collected in 2015 by the LEADER Program from major US medical centers (4-9 sample sites/region and 502-1,773 isolates per region). PFGE SEPI116E has been noted in linezolid mediated resistance to linezolid in human staphylococcal clinical isolates recovered in the United States.

Table 3. Isolates with elevated or resistant-level (MIC values (µg/ml) in the 2015 LEADER Program.

Conclusions

In the 2015 LEADER Program, linezolid activity was shown to remain high with 99.8% susceptibility for all Gram-positive organisms tested at 1 µg/ml. Of the 6,741 isolates tested from USA medical centers in 35 states, there were only 11 linezolid non-susceptible isolates (0.2%).

In the 2014 LEADER Program, 8/15 (53.3%) of the linezolid non-susceptible isolates harbored cfr. In the 2015 LEADER Program, 11 linezolid non-susceptible isolates harbored cfr (both of which were S. epidermidis). The VRE rate did not show an increase in the most current surveillance year.

Other resistant mechanisms included (no. isolates with at least one mechanism): tigecycline (13; 0.2%), linezolid (21; 0.3%), ciprofloxacin (15; 0.2%), gentamicin (4; 0.1%) (no. / isolate). Overall, the “all isolates” linezolid-resistant and non-susceptible rate did not change in the most current surveillance year.

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References

