We have demonstrated a novel diagnostic for positive MENSA tests were measured in patients with prosthetic joint infections, implant-associated infections, deep tissue abscesses and diabetic foot ulcers. ROC analyses of the aureus aureus many as 60,000 people. Rate of infection is 1-4%. As observed among infected subjects. Some were better than expected. No simple pattern of reactivity was seen. Some antigens were superior to serum and demonstrated high sensitivity and specificity for difficult to diagnose (54):

\[ S. aureus \]

B. Sandeep Soin, MD, PhD, Stephen L. Kates, MD, Edward M. Schwarz, PhD, Frances Eun-Hyung Lee, MD, John L. Daiss, PhD, University of Rochester, Rochester, NY; 2. Kyoto University Hospital, Kyoto, Japan; 3. Virginia Commonwealth University, Richmond, VA; 4. Emory University, Atlanta, GA; 5. Microb-plex, Inc., Atlanta, GA.

**Background**

- Staphylococci are multidrug-resistant bacteria that are difficult to diagnose.
- Pathogen-specific antibodies providing early MRSA coverage are critical for treatment.

**Methods**

- We included all patients with culture-confirmed aureus infections with negative serum IgG and IgA for aureus.
- Blood samples were collected within 48 hours of admission.
- IgG, IgA, and IgM concentrations were measured by multiplex immunoassay.

**Results**

- Positive MENSA tests were measured in patients with prosthetic joint infections, implant-associated infections, deep tissue abscesses and diabetic foot ulcers.
- ROC analyses of the aureus aureus many as 60,000 people.

**Conclusions**

- We have demonstrated a novel diagnostic for aureus in more than 60,000 people.
- Serum IgG levels in acute phases, but not in chronic stages.
- High background levels of IgG may be found in healthy patients.

*Some Igs Have Diagnostic Potential*

- IgG levels: with or without aminoglycosides.
- IgM levels: with or without aminoglycosides.

*Representative Data – S. aureus*

<table>
<thead>
<tr>
<th>Controls</th>
<th>Colonized</th>
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<th>Other Infections</th>
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<tbody>
<tr>
<td>IgG</td>
<td>IgA</td>
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*Representative Data – Non-S. aureus*

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**Diagnoses for Orthopaedic Infections**

- Implant-associated Staphylococcal infections are the "dark side" of a miracle of modern medicine.
- Implant-associated infections are caused by Staphylococcus aureus (S. aureus).

**Serum IgG as a Biomarker for Infection?**

- Whole Blood
- Plasma
- Serum
- Cell-free Serum

**Demographics**

- Subjects with acute S. aureus infections:
  - Reduced neutrophil percentage
  - Elevated C-reactive protein (CRP)

**Multiplex Immunoassay**

- Multiplex immunoassay
- A rapid and sensitive assay for detecting S. aureus.
- Antibody responses to S. aureus antigens are measured.

**Future Directions**

- We have developed a new analytic approach for early detection of S. aureus infections.

**Acknowledgements**

- Thanks to the many who have provided support, effort, guidance and encouragement.