108. Efficacy of Dalbavancin Compared to Standard of Care for the Treatment of Osteomyelitis: A Retrospective Study

Acknowledgment: Preliminary data suggest that the efficacy of dalbavancin, a long-acting lipoglycopeptide, may be similar to current standard of care (SoC) treatment options for osteomyelitis, and may be associated with fewer treatment related adverse events. This study assessed the incidence of treatment failure in patients receiving either dalbavancin or SoC for the treatment of osteomyelitis.

Methods: This was a multi-center, retrospective, observational cohort study of adult patients diagnosed with osteomyelitis. Patients were matched 1:2 to either dalbavancin (1500 mg infused intravenously on days 1 and 8) or SoC for osteomyelitis (oral or intravenous antibiotics) by Charlson Comorbidity Index, site of infection, and causative pathogen. The primary objective was to determine the incidence of treatment failure at one year follow-up period. Secondary objectives included hospital length of stay (LOS), infection related one year readmission rates, and treatment related adverse events.

Results: A total of 132 patients were matched to receive dalbavancin (n = 42) or SoC (n = 90). Baseline characteristics were similar between the two treatment groups. The majority of patients had lower extremity osteomyelitis (76.2% vs 73.3%) with an etiology of diabetic foot infection (45.2% vs 46.7%) in the dalbavancin and SoC groups, respectively. Treatment failure was similar between those who received dalbavancin (23.3% vs 21.4%, p = 0.808). Patients who received dalbavancin had a significantly shorter hospital LOS compared to patients who received SoC regimens (21.4% vs 23.3%, p = 0.399). Treatment failure was similar across all study locations. In addition, no significant differences in outcome at 6 months. Antibiotic days was reduced in negative margins compared to positive margins (57.1% vs 29.8%, p = 0.017). MSSA was significant noted in positive margins (45.7% vs 14%, p = 0.001). MRSA was similar regardless of margin results (15.8% vs 11.4%, p = 0.399). Initial ESR, CRP, and HbA1c were similar between groups.

Conclusion: Our study noted that negative proximal bone margins resulted in more favorable outcomes at 12 months and less days of antimicrobial therapy. Patients with negative margins had lower rates of readmission at 12 months for surgical site complications. Negative proximal bone margins results can guide antibiotic therapy and improve outcomes of resections. Presence of S. aureus was significant in positive margins and likely warrant consideration for further aggressive intervention.

Clinical Characteristics of Patients with Diabetic Foot Osteomyelitis

Table: Negative vs Positive Margins

| Negative (n = 57) | Positive (n = 35) | p-value |
|------------------|------------------|--------|
| **Demographics**  |                  |        |
| Age (Years)      | 53 ± 10          | 54 ± 10| 0.635 |
| Male             | 42 (75.1%)       | 30 (85.7%)| 0.105 |
| **MSSA (%)**     |                  |        |
| HbA1c            | 8.3 ± 2.7        | 8.3 ± 2.4| 0.298 |
| **Vascular Disease** | 24 (42.1%)      | 10 (28.6%)| 0.192 |
| Smoking History  | 20 (35.1%)       | 20 (57.1%)| 0.038 |
| **Hospital Length of Stay (Days)** | 18 ± 13         | 30 ± 15| 0.001 |
| **Microbiology**  |                  |        |
| S. aureus        | 17 (29.8%)       | 20 (57.1%)| 0.017 |
| MSSA             | 8 (14.0%)        | 16 (45.7%)| 0.001 |
| MRSA             | 9 (15.8%)        | 4 (11.4%)| 0.599 |
| Staphylococcus species | 6 (10.5%)      | 13 (35.8%)| 0.242 |
| Mixed Culture without S. aureus | 9 (15.5%)  | 5 (14.3%)| 0.253 |
| Negative Cultures | 25 (45.6%)      | 22 (62.9%)| 0.041 |
| **Laboratory**   |                  |        |
| CRP              | 10.17 ± 13.54    | 10.0 ± 9.95| 0.031 |
| ESR              | 88 ± 130         | 92 ± 29 | 0.794 |
| Procalcitonin    | 1.53 ± 0.72      | 1.9 ± 2.43| 0.064 |
| **OSM**          |                  |        |
| S. aureus        | 0 (0.0%)         | 0 (0.0%)| 0.004 |

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