Potentially Cost-Saving Opportunities With Early Use of Omadacycline in Hospitalized Patients With ABSSSI With Inadequate Early Response to Vancomycin Plus Piperacillin-Tazobactam: Findings From a Decision-Analytic Budget Impact Model

Kenneth L. Pensee, PhD, MPH1; Thomas Lodise, PharmD, PhD2; Camelia Graham, PhD, MSPH3; Hoa Van Le, MD, PhD3; Canter Martin, MBA3; Kate Young, PhD, MPH3

1Paratek Pharmaceuticals, Inc., King of Prussia, PA, USA; 2Albany College of Pharmacy and Health Sciences, Albany, NY, USA; 3PAREXEL Access Consulting, London, UK.

ABSTRACT

Antibiotics with intravenous (IV) and oral (PO) dosing formulations have been shown to shorten hospital stay across several infection contexts. A pan-European study found that patients with MRSA-cSSTI who switched from IV to oral antibiotic therapy had 5.3 fewer IV days and a 2.9% shorter overall hospital stay (Kuipers et al., 2018). However, recent real-world evidence analysis suggests up to 29.5% of patients with ABSSSI receiving VAN monotherapy and 46.1% receiving TZP monotherapy may not receive adequate early treatment response. Average inpatient costs per ABSSSI patient range between $6,000 to $13,000 2010 US dollars (USD), with multi-day room and board contributing to the overall cost. Ongoing monitoring of antibiotic resistance and adverse drug events will be crucial to ensure effective use of antibiotics.

OBJECTIVES

To explore the management of hospitalized patients with ABSSSI who have inadequate early response to VAN or TZP treatment and the potential for cost savings with early switch to OMC.

To determine the incremental impact of 1-day and 2-day reduction in hospital LOS on inpatient/outpatient costs with OMC relative to continued VAN plus TZP treatment (5-day course), including hospital and indirect costs.

METHODS

A decision-analytic budget impact model was developed to evaluate the cost-effectiveness of OMC compared with continued VAN plus TZP treatment in the presence of inadequate early response to ABSSSI treatment.

Modeling Assumptions

- Patients enter the analysis following a 5-day course of treatment with IV VAN plus TZP, when they meet the criteria for inadequate early response.
- All patients are hospitalized for 5 days as per the base case.
- Patients who receive OMC IV treatment in the hospital for 5 days (base case) will continue to receive OMC as an oral formulation for 2 days, as determined by study protocol.
- After this initial treatment, patients are defined as inadequate early responders and may be treated in one of two routes: continue treatment with IV VAN plus TZP until response (as described in Amara 2013) or inpatient treatment switch to OMC (IV) at Day 4.
- No additional doses of OMC are administered after Day 5.
- OMC is administered every 12 hours.
- The only exception is VAN assays, as this was deemed a significant treatment-specific monitoring requirement.

All OMC costs used in the analysis are cost-saving when LOS is shortened by 2 days. OMC is cost-saving at $300/day when LOS is shortened by 1 day.

RESULTS

- Early discharge by 1 or 2 days with OMC can be cost-saving; the degree varies by the simulated per diem drug acquisition costs.
- The reduction in LOS of 0.9 days results in a mean cost saving of $221 per patient.