Omadacycline Treatment of Acute Bacterial Skin and Skin Structure Infections in Intravenous Drug Users

Charles V. Pollack, Jr.

Thomas Jefferson University Hospital, Philadelphia, PA, USA

Presented at SAEM, 16 May 2019, Las Vegas, NV, USA
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Disclosure and Acknowledgments

- Charles V. Pollack, Jr. has received consulting and advisory fees from Paratek Pharmaceuticals, Inc.
- In addition Dr. Pollack discloses financial relationships with: AstraZeneca, BMS/Pfizer, Boehringer Ingelheim, CLS/Behring, Daichi-Sankyo, Janssen Pharma, and Portola
- Co -authors:
  - Christopher A. Ohl, Wake Forest School of Medicine, Winston Salem, NC, USA, has received consulting and advisory fees from Paratek Pharmaceuticals, Inc.
  - Surya Chitra has received consulting and advisory fees from Paratek Pharmaceuticals, Inc.
  - Marla Curran, Lynne Garrity-Ryan and Paul C. McGovern are employees and shareholders of Paratek Pharmaceuticals, Inc.

Special thanks to the patients and investigators who participated in the OASIS-1 and OASIS-2 studies

These studies were sponsored by Paratek Pharmaceuticals, Inc.

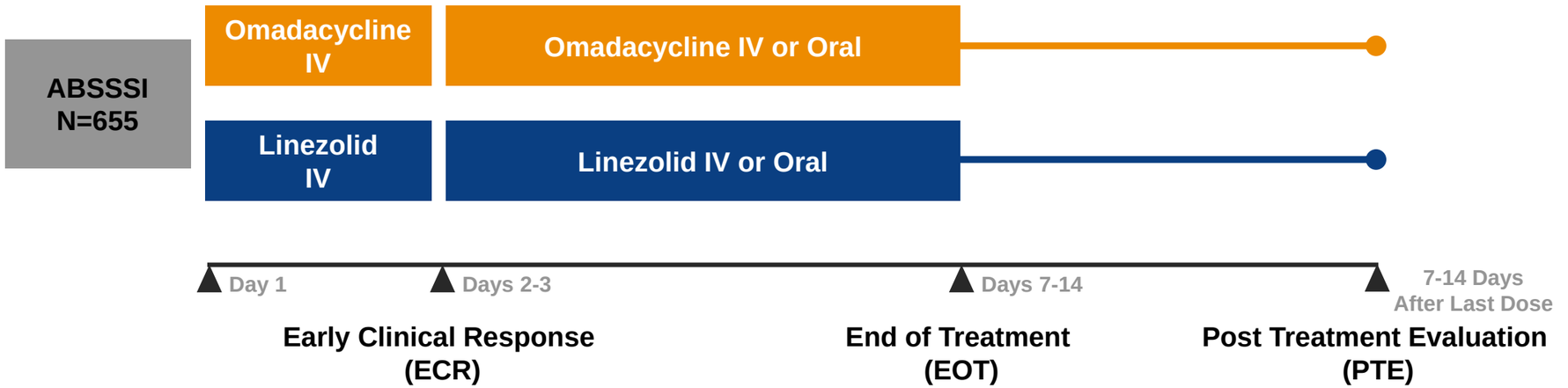
Omadacycline for IVDU Patients

- Infections are common and challenging to treat in intravenous drug using (IVDU) patients[1]
- Acute bacterial skin and skin-structure infections (ABSSSI) are associated with substantial morbidity and increased healthcare costs[2]
- Omadacycline (OMC) is a novel aminomethylcycline − a tetracycline-class antibiotic approved in the US as once-daily intravenous (IV) and oral monotherapy for ABSSSI[2]
- OMC could be particularly useful for improved wound management
  - Ease of transition from IV to oral therapy on the same drug
  - Oral-only regimens may help achieve good therapy compliance
- Here we report microbiology, efficacy and safety in the pooled IVDU vs non-IVDU patients from two Phase 3 ABSSSI studies (OASIS-1 and OASIS-2)[2,3]

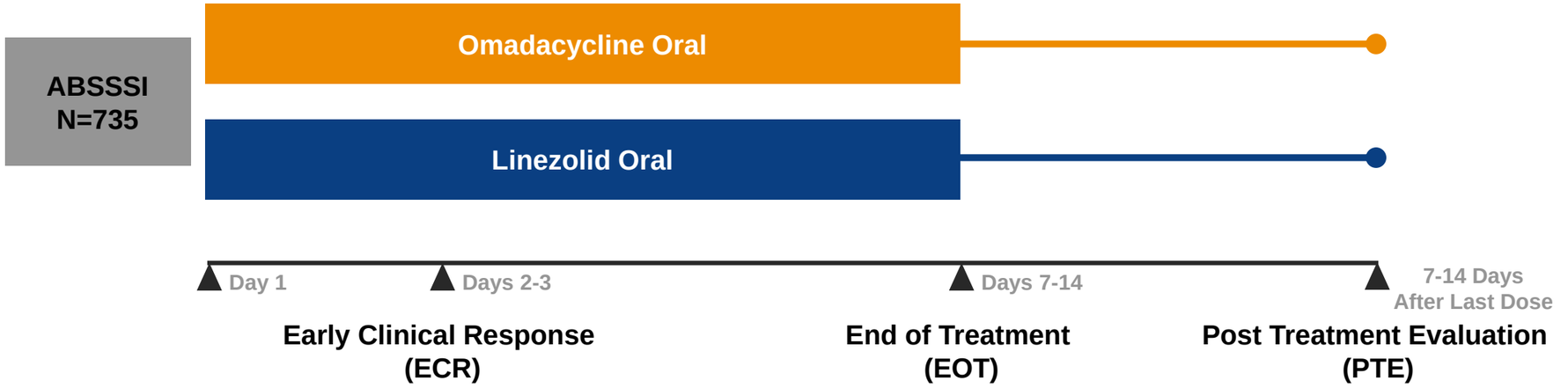
1. Harris RE, et al. Drug Alcohol Depend. 2018;187:8-12.
2. O'Riordan W, et al. N Engl J Med. 2019;380:528-538.
3. O'Riordan W, et al. ECCMID 2018, Presentation O0425.

Study Designs and Primary Endpoints

OASIS-1



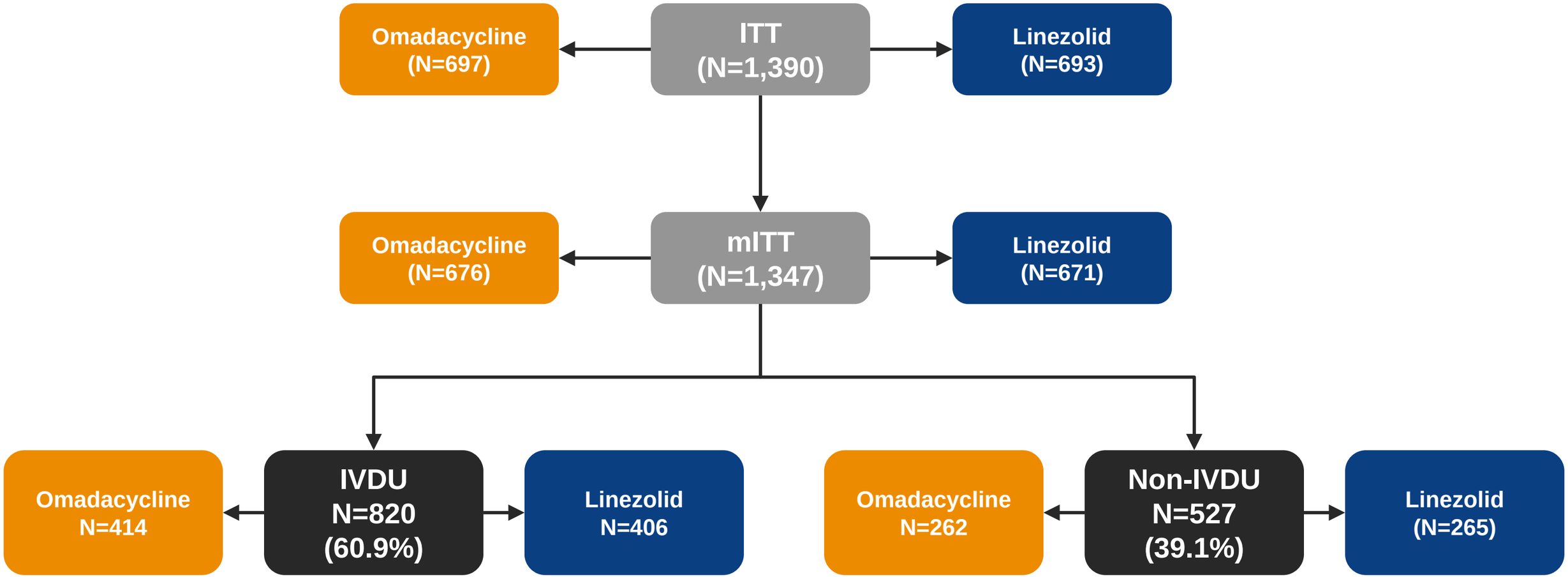
OASIS-2



Early Clinical Response (ECR): efficacy was evaluated at 48-72 hours after the first dose; ECR was based on a reduction of lesion size by 20% or more

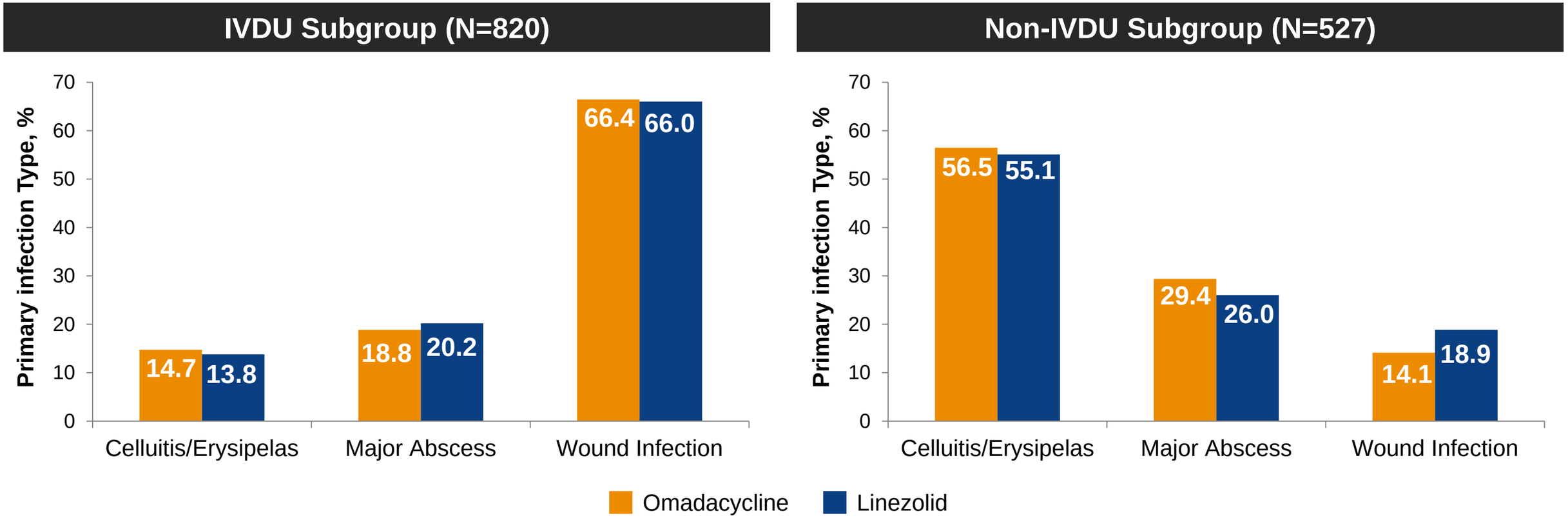
Post Treatment Evaluation (PTE): based on investigator assessment of clinical response, 7-14 days after the last dose

Study Population: modified Intention-To-Treat (mITT)



- mITT population included patients with no sole Gram-negative pathogens at baseline

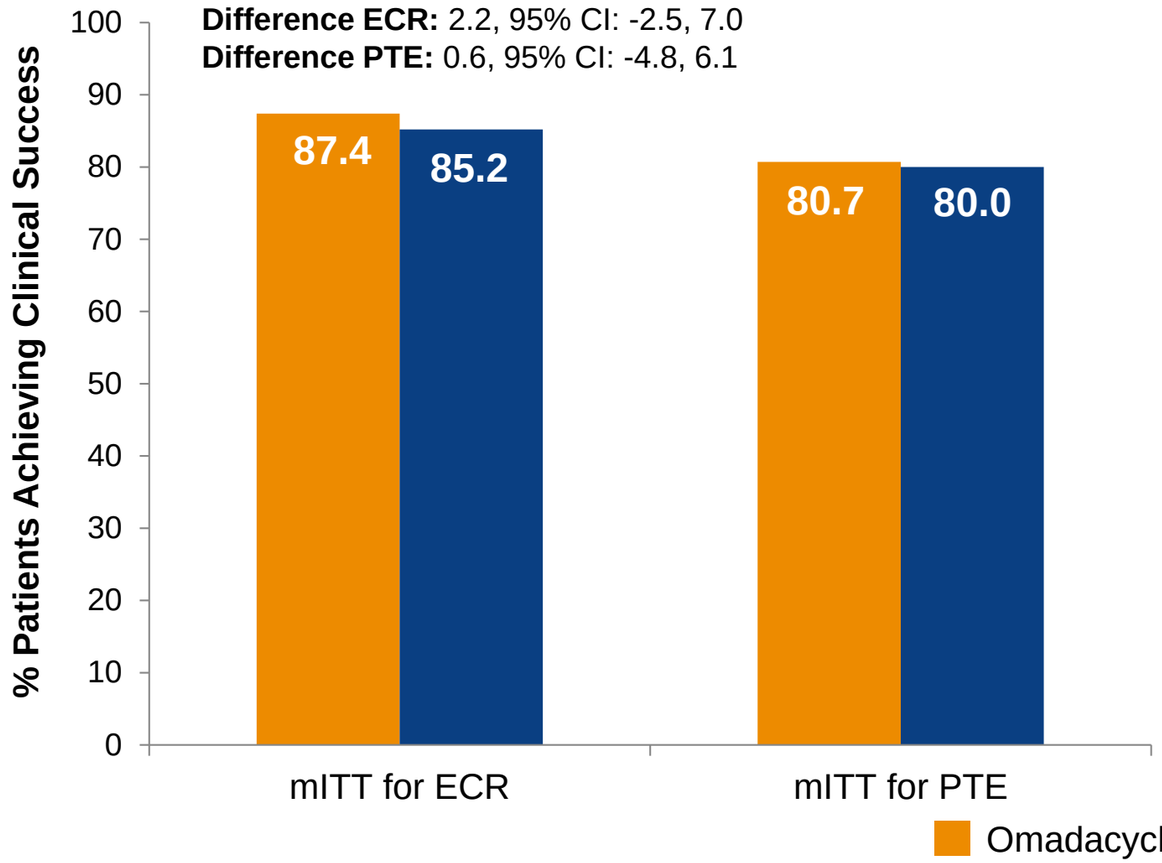
Infection Type and Baseline Pathogens



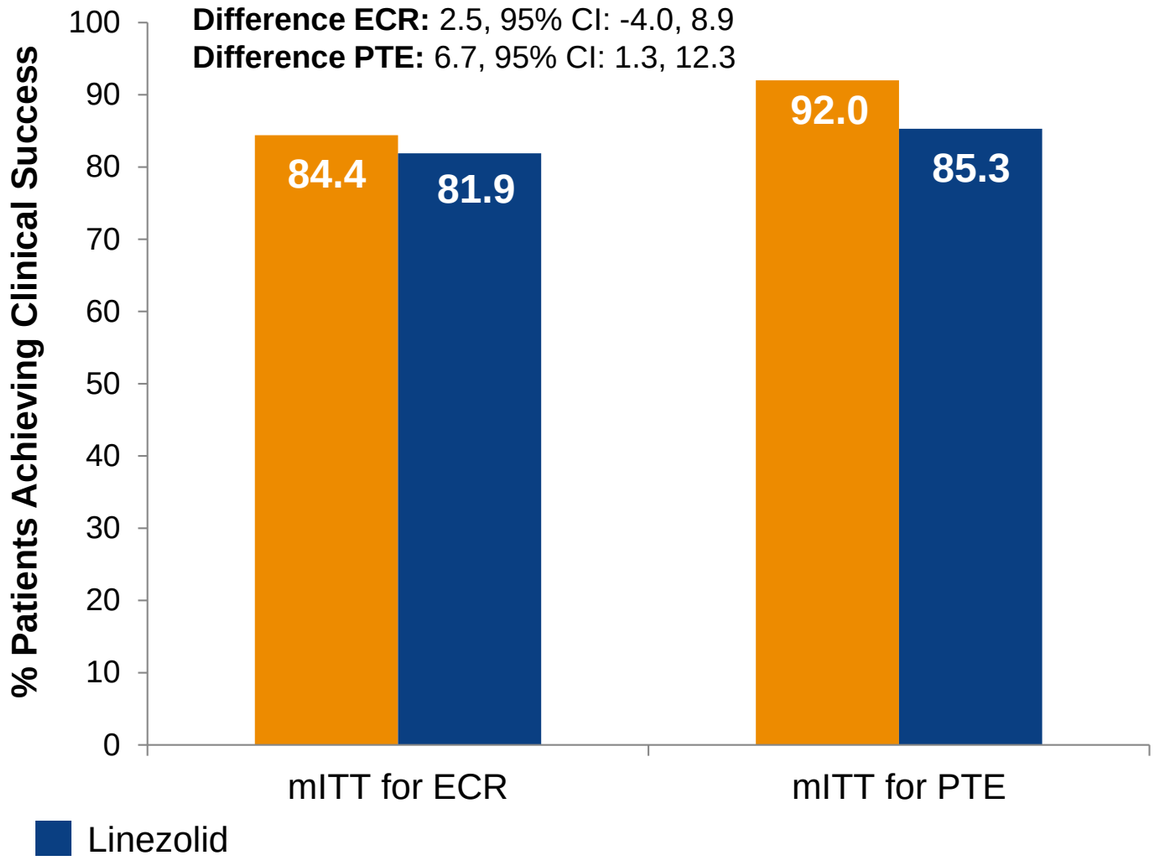
- Gram-positive aerobes and *S. aureus* were the most commonly isolated pathogens in IVDU and non-IVDU patients
- In the micro-mITT population (N=1,018; IVDU: n=686; non-IVDU: n=332)
  - *S. aureus* was isolated from 74.7% and 74.4% of patients in the IVDU and non-IVDU groups, respectively
  - MRSA was isolated from 30.6% and 36.1% of patients in the IVDU and non-IVDU groups, respectively

ECR and Clinical Response at PTE in IVDU and Non-IVDU Patients (mITT population)

IVDU Subgroup (N=820)



Non-IVDU Subgroup (N=527)



Omadacycline Linezolid

mITT Population (N=1,347)

TEAEs Occurring in ≥ 2% IVDU Patients in Either Treatment Group

	IVDU Subgroup (N=822)		Non-IVDU Subgroup (N=558)	
Parameter	**Omadacycline (N=411)**	**Linezolid (N=411)**	**Omadacycline (N=280)**	**Linezolid (N=278)**
Subjects with any TEAE, n (%)	232 (56.4)	189 (46.0)	121 (43.2)	95 (34.2)
Nausea	108 (26.3)	43 (10.5)	43 (15.4)	17 (6.1)
Vomiting	58 (14.1)	17 (4.1)	21 (7.5)	10 (3.6)
Wound infection	26 (6.3)	21 (5.1)	4 (1.4)	1 (0.4)
Cellulitis	24 (5.8)	18 (4.4)	3 (1.1)	6 (2.2)
Infusion site extravasation	22 (5.4)	15 (3.6)	6 (2.1)	4 (1.4)
Subcutaneous abscess	20 (4.9)	21 (5.1)	3 (1.1)	6 (2.2)
Aspartate aminotransferase increased	19 (4.6)	21 (5.1)	6 (2.1)	3 (1.1)
Alanine transaminase increased	18 (4.4)	22 (5.4)	10 (3.6)	3 (1.1)
Headache	12 (2.9)	12 (2.9)	11 (3.9)	9 (3.2)
Diarrhea	11 (2.7)	10 (2.4)	11 (3.9)	10 (3.6)

- Infusion site extravasation seen in the OASIS-1 trial was due to poor venous access in the IVDU patient subgroup

Conclusions

- In the pooled IVDU versus non-IVDU patients from two Phase 3 ABSSSI studies (OASIS-1 and OASIS-2)
  - Wound infection and cellulitis/erysipelas were the most common ABSSSI infection types at baseline
  - *S. aureus* was the most commonly isolated pathogen in IVDU and non-IVDU patients
    - About 50% of *S. aureus* pathogens in the population were MRSA
  - Omadacycline showed similar efficacy and safety, compared with linezolid, in IVDU and non-IVDU patients
  - Omadacycline was modestly more effective at PTE, compared with linezolid, in the non-IVDU patient subgroup

Thank you for your attention!