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Efficacy of Omadacycline in the Treatment of Acute Bacterial Skin and Skin Structure Infections in Patients With Cellulitis or Abscesses

Philip A. Giordano, MD, FACEP,[1] Mauricio Rodriguez, PharmD, BCPS, BCCCP, BCIDP,[2]
Surya Chitra, PhD, MBA,[2] Amy Manley, BS,[2] Gregory Volturo, MD, FACEP[3]

[1]Orlando Health, Inc., Orlando FL; [2]Paratek Pharmaceuticals, King of Prussia, PA, USA;
[3]University of Massachusetts Medical School, Worcester, MA, USA

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Disclosures

- PAG, GV: Advisors for Paratek Pharmaceuticals
- MR, SC, AM: Employees and shareholders of Paratek Pharmaceuticals

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Background

- Omadacyline (OMC): a novel aminomethylcycline antibiotic currently approved for:
  - Community-acquired bacterial pneumonia[1]
  - Acute bacterial skin and skin structure infections (ABSSSI)[2]

- OMC is active against key causative pathogens, including methicillin-susceptible (MSSA) and resistant (MRSA) *Staphylococcus aureus*[3]

- This pooled analysis examined the efficacy of OMC in patients who were not people who inject drugs from the pivotal Phase 3 Omadacycline in Acute Skin and Skin Structure Infections (OASIS)-1 and -2 studies, who had:
  - Cellulitis / Erysipelas
  - Major abscesses

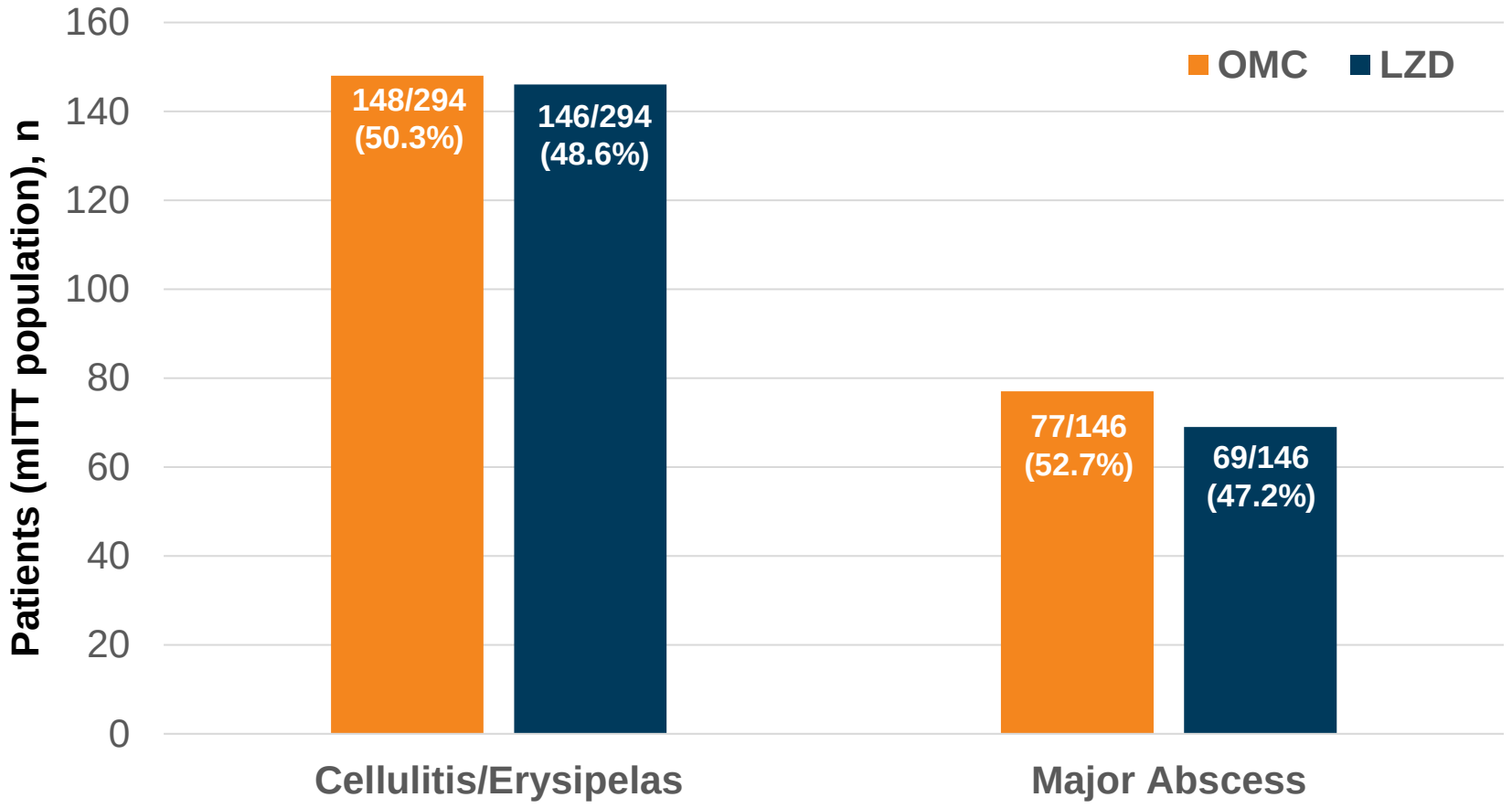
1. Stets R, et al. N Eng J Med. 2019;380:517-27. 2. O'Riordan W, et al. Lancet Infect Dis. 2019;19:1080-90. 3. Pfaller MA et al. Antimicrob Agents Chemother. 2017;61:e00018-17.

Methods and Endpoints

- Patients with ABSSSI were randomized 1:1 to OMC or linezolid (LZD):
  - IV-to-oral: OASIS-1 (NCT02378480)[1]
  - Once-daily oral OMC or twice-daily oral LZD: OASIS-2 (NCT02877927)[2]
  - Total therapy duration: 7 – 14 days
- Populations:
  - modified intent-to-treat (mITT, randomized patients without a sole Gram-negative pathogen)
  - micro-mITT (mITT patients with ≥1 identified Gram-positive causative pathogen)
- **Primary Endpoint:** early clinical response (ECR) in the mITT population
  - Survival and ≥20% reduction in lesion size, 48–72 h after first dose, without rescue therapy
- **Secondary Endpoint:** post-treatment evaluation (PTE) in the mITT population
  - Survival and infection resolution/improvement, 7–14 days after last dose

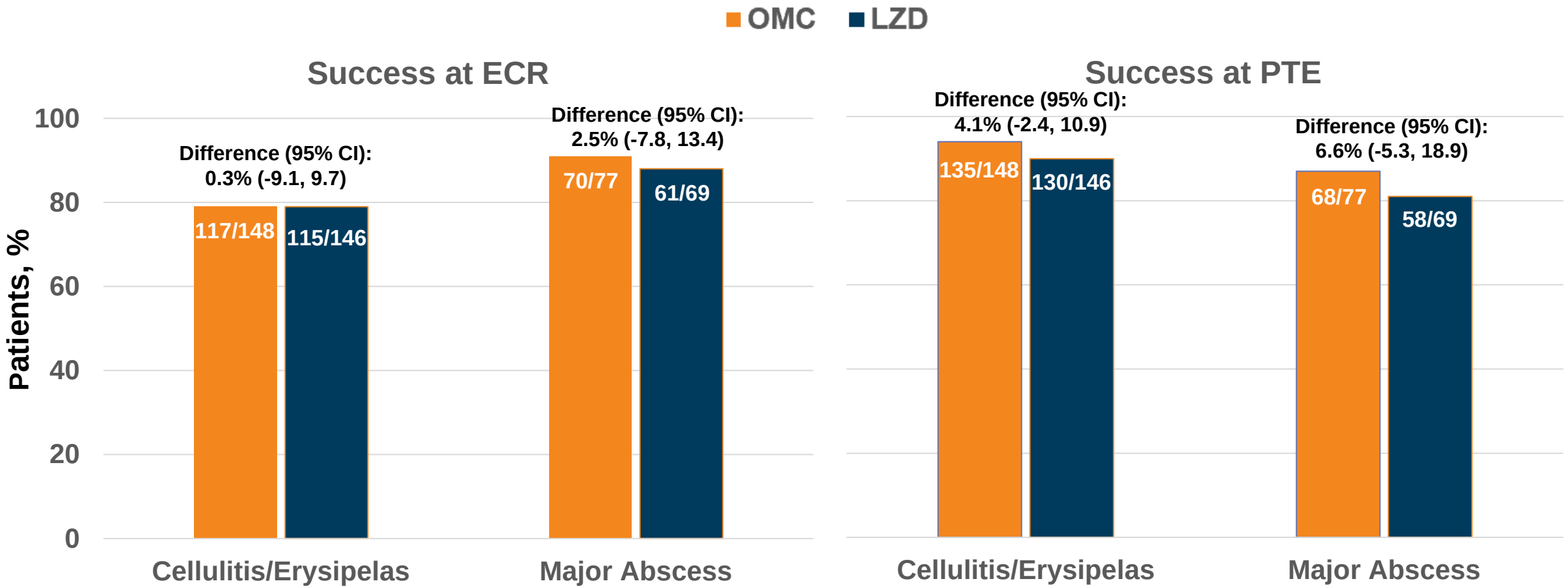
1. O'Riordan W, et al. *New Engl J Med.* 2019;380:528-538. 2. O'Riordan W, et al. *Lancet Infect Dis.* 2019;201:1080-1090.

Baseline characteristics were generally similar between groups



- In the micro-mITT population, *S. aureus* was the primary baseline pathogen, detected in:
  - 111 (76%) of patients with cellulitis/erysipelas
  - 94 (76%) of patients with major abscess
- MRSA was detected in:
  - 46 (41%) patients with cellulitis/erysipelas
  - 56 (60%) patients with major abscess

Success at ECR and PTE were comparable between treatment groups and infection types



Success at ECR was comparable with regard to presenting clinical signs and symptoms of infection

	Cellulitis/Erysipelas			Major Abscess		
	OMC	**LZD**	**Difference (95% CI)**	**OMC**	**LZD**	**Difference (95% CI)**
mITT, n	**148**	**146**		**77**	**69**	
WBC count ≥10,000 or ≤4000 cells/mm^3, n/N (%)	44/60 (**73.3**)	43/55 (**78.2**)	−4.8% (−20.4, 11.1)	26/29 (**89.7**)	22/27 (**81.5**)	8.2% (−11.3, 28.4)
Fever >38.0°C, n/N (%)	35/39 (**89.7**)	32/43 (**74.4**)	15.3% (−1.7, 31.9)	17/20 (**85.0**)	15/16 (**93.8**)	−8.8% (−31.6, 16.1)
Lesion size 75–300 cm^2, n/N (%)	63/80 (**78.8**)	58/77 (**75.3**)	3.4% (−9.8, 16.7)	50/55 (**90.9**)	43/49 (**87.8**)	3.2% (−9.3, 16.5)

Success rates were high and numerically similar at PTE for patients presenting with signs and symptoms of infection and *S. aureus*

	Cellulitis/Erysipelas			Major Abscess		
	OMC	**LZD**	**Difference (95% CI)**	**OMC**	**LZD**	**Difference (95% CI)**
mITT, n	**148**	**146**		**77**	**69**	
WBC count ≥10,000 or ≤4000 cells/mm^3, n/N (%)	57/60 (**95.0**)	46/55 (**83.6**)	11.4% (0.1, 24.1)	24/29 (**82.8**)	22/27 (**81.5**)	1.3% (−19.6, 22.6)
Fever >38.0°C, n/N (%)	38/39 (**97.4**)	40/43 (**93.0**)	4.4% (−7.1, 16.5)	19/20 (**95.0**)	15/16 (**93.8**)	1.3% (−18.9, 24.5)
Lesion size 75–300 cm^2, n/N (%)	75/80 (**93.8**)	69/77 (**89.6**)	4.1% (−4.9, 13.8)	50/55 (**90.9**)	38/49 (**77.6**)	13.4% (−0.6, 28.2)
Micro-mITT, n	**64**	**82**		**67**	**56**	
Success at PTE by *S. aureus* baseline pathogen, n/N (%)	48/51 (**94**)	53/60 (**88**)		44/52 (**85**)	31/42 (**74**)	

Conclusions and Summary

- Omadacycline is a once-daily, IV or oral option for inpatient and outpatient treatment of ABSSSI in patients with cellulitis or major abscess, including those associated with MRSA

- Success at ECR and PTE results were similar for patients who presented at baseline with low/high white blood cell counts, fever, and lesion sizes ≤300 cm^2

- There were no new safety signals; nausea and vomiting were the most frequent treatment-emergent adverse events across groups

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