Overview of the PRN

The Infectious Diseases Practice and Research Network (ID PRN) is composed of students, residents, fellows, pharmacists, and other clinical research specialists throughout the world who practice in the exciting realm of infectious diseases. Serving 2526 total members, which include 783 students, 177 residents, and 30 fellows, the ID PRN is the largest research network within ACCP. Members are actively engaged in advancing pharmacy practice throughout an incredible variety of practice settings and believe strongly in education, research, credentialing, and professional stewardship. This has consistently been demonstrated through the PRN's substantial contributions to the Frontiers Fund, sponsorship of FIT and MERIT scholarships and of travel grants for students and trainees, and development of expert educational programming at state and national meetings. In addition, our members are active and dedicated leaders on committees and executive boards within ACCP and other organizations, including our close partnership with the Society of Infectious Diseases Pharmacists.

The members of the ID PRN are dynamic, collaborative, supportive, and innovative. This year, the PRN revolutionized member involvement by broadcasting the Global Conference on Clinical Pharmacy business meeting through Periscope for all to watch live. In addition, the @accpinfdprn Twitter account was launched to share the latest practice advances in antimicrobial, antifungal, and antiviral pharmacotherapy with our membership. With such a diverse and passionate membership base, the PRN recognizes how essential it is to engage members and consistently work together to extend the frontiers of clinical pharmacy practice. Our mission in our work is to disseminate knowledge and promote career opportunities for infectious diseases specialists to optimize patient outcomes and demonstrate the value of the pharmacist across the health care continuum.

Opportunities and Resources

Starting this year, the Infectious Diseases PRN became the first PRN to offer the opportunity for resident or fellow members to serve on the Executive Board of Officers. In addition, students, residents, fellows, and pharmacists are encouraged to serve on PRN committees, including the Programming, Publications, Awards, and Nominations committees.

To promote research and professional development, the ID PRN sponsors two $1000 awards to residents or fellows and two $1000 awards to students who have a poster accepted to the ACCP Annual Meeting. The award recipients must present their original research at the Infectious Diseases PRN business meeting. The ID PRN has also made a $5000 contribution to the Frontiers Fund the past few years and has supported members who apply for FIT or MERIT scholarships within ACCP.

The e-mail list associated with PRN membership is active daily, inciting compelling clinical discussions and bringing attention to critical issues in practice. Networking is promoted constantly through e-mail list involvement, social media outlets, Annual Meeting attendance, research collaborations, and more. We welcome all who are interested in infectious diseases, even if it is not their current practice area. The PRN website has great tools and resources for

resident and student members. It also contains the contact information for all Executive Board members. Please do not hesitate to reach out to us!

Clinical Case—Long-Acting MRSA Agents

Skin and soft tissue infection (SSTI) is a common infectious disease affecting the community setting. The incidence of SSTI is rising, and methicillin-resistant *Staphylococcus aureus* (MRSA) as a causative pathogen is increasing. Skin and soft tissue infection was listed as the primary diagnosis for around 195,000 admissions in 2004, representing a 29% increase in the rate of admissions since 2000.[1] From a cohort of abscess cultures collected in the emergency department, MRSA was the causative pathogen in 59% of cases.[2] Most SSTIs can be managed with incision and drainage and short courses of oral antibiotics.[3] However, some types of SSTI may require longer courses of antibiotics and admission for close observation for issues such as cellulitis, major cutaneous abscesses, wound infections, and any type of SSTI associated with systemic signs of infection, or when MRSA is suspected.[3] The increasing incidence of SSTI and MRSA has a negative clinical impact, given that patients admitted to the hospital with SSTIs had an average length of stay that was 5 days longer than that of matched controls, excess hospital charges that were $21,000 higher, and higher mortality rates.[4]

Because of the increasing incidence of SSTIs, longer length of stay, and excess hospital costs, clinicians must find therapeutic alternatives to reduce admissions and costs. In 2014, the U.S. Food and Drug Administration approved two new lipoglycopeptide antibiotics for the treatment of SSTIs: dalbavancin and oritavancin. These agents have the clinical advantage of a prolonged terminal half-life, facilitating single-dose (oritavancin) or two-dose (dalbavancin) treatments. Lipoglycopeptides have a mechanism of action similar to that of vancomycin; they inhibit peptidoglycan synthesis in the bacterial cell wall. A lipophilic side chain allows these agents to concentrate within the cell membrane at their site of action.[5]

These lipoglycopeptides have broad-spectrum gram-positive activity against *Streptococcus*, *Staphylococcus*, and *Enterococcus* spp.[6] Unlike telavancin and dalbavancin, oritavancin retains in vitro activity against vancomycin-resistant *Enterococcus faecium* through additional bactericidal actions.[7]

When contemplating adding these lipoglycopeptide agents to formulary, costs and logistics are major points of consideration for clinicians. These agents still have substantial direct cost; however, they must be considered in the context of the cost of preventing a hospital admission. Considerations must be made for follow-up—particularly for the repeat dosing of dalbavancin. Adverse effect monitoring of these agents may be problematic because of their long half-life and the inability to reverse them. These agents are ideal for infusion in an outpatient or emergency observation setting. Pharmacists in infectious diseases, ambulatory care, and emergency medicine have many opportunities to play a role in implementing the use of these long-acting MRSA agents in their practice.

	Dalbavancin[8]	Oritavancin[9]
Dosage and administration	• 1000 mg x 1 followed by 500 mg x 1, 7 days later • Infuse over 30 min • CrCl < 30 mL/min/1.73 m^2: 750 mg x 1 followed by 375 mg x 1, 7 days later	• 1200 mg in 1000 mL of D_5W infused over 3 hr x 1
Distribution	93% protein bound	85% protein bound
Metabolism	Non–CYP-dependent mechanisms	CYP system
Drug interactions		• Weak inducer of CYP 3A4 and 2D6 • Noncompetitive inhibitor of 1A2, 2D6, 2C9, 2C19, and 3A4 • Drug-laboratory interaction: Prolongs aPTT for 48 hr and INR for 24 hr after administration
Excretion	• Terminal $t_{1/2}$ 2 wk • 20% feces, 33% unchanged in urine, 12% metabolite in urine	• Terminal $t_{1/2}$ ~10 days • Unchanged in urine and feces
Clinical Studies Primary outcome: early clinical response (ECR) Cessation of lesion spread Resolution of fever At 48–72 hr	DISCOVER 1 and 2[10] • Compared with IV vancomycin x 3 days followed by linezolid to complete 10–14 days of therapy • ECR: 79.7% dalbavancin vs. 79.8% comparator • Day 14: 90.7% dalbavancin vs. 92.1% comparator	SOLO I and II[11,12] • Compared with IV vancomycin for 7–10 days • ECR: 81.2% oritavancin vs. 80.9% comparator • Posttherapy evaluation: 81.2% oritavancin vs. 80.2% comparator
	Conclusions: Noninferior to vancomycin or vancomycin followed by linezolid.	
Adverse effects	• Nausea/vomiting/diarrhea • Rash and pruritus • Hypotension • Hypokalemia • Increased ALT	• Nausea/vomiting/diarrhea • Headache • Abscesses • Treatment discontinuation because of cellulitis and osteomyelitis • Increased ALT and AST

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