A Closer Look at the Adult Medicine PRN

Overview of the PRN

The Adult Medicine Practice and Research Network (PRN) is composed of students, residents, fellows, clinical pharmacists, and other practitioners with an interest in adult medicine. This diverse collection of individuals encompasses pharmacists from around the world who practice in inpatient and outpatient settings, academia, and the pharmaceutical industry. As the one of the largest PRNs, the Adult Medicine PRN has 1,151 members, including 184 students, 105 residents, and 4 fellows. The PRN provides a forum for addressing the acute and chronic health care issues of individual patients and on an organizational level. Objectives of the PRN include facilitating information exchange to optimize patient care and collaboration for scholarly activities.

The PRN is very active, with many opportunities for professional growth through service on its seven committees: Nominations, Programming, Training and Travel Awards, Newsletter, Poster Walk-Rounds, PRN E-mail List Archives, and Practice-Based Research Network (PBRN) Research. Each committee has responsibilities to advance adult medicine pharmacy practice. The PRN communicates and engages its members most commonly through its e-mail list and website. The e-mail list is very active, with questions that often generate discussion regarding patient scenarios and clinical controversies.

Many of the PRN's members are leaders in the pharmacy profession who make valuable contributions through article publications, poster presentations, and platform presentations at local, state, and national meetings. In the most recent *ACCP Report*, 3 of the PRN's members had received promotions, 15 had received various honors and awards, 3 had been inducted as new ACCP Fellows, 3 had received grant funding, and 38 had been published. The PRN is proud of its members' accomplishments and wants to highlight these in its annual reports and biannual newsletters.

Opportunities and Resources for Residents and Fellows

The Adult Medicine PRN has a large cohort of resident, fellow, and student members and supports their active involvement in the PRN. Student, resident, and fellow members are encouraged to serve on any of the PRN's committees, many of whom currently do so.

To encourage professional growth and networking, the PRN sponsors two $500 travel awards for residents, students, or fellows to attend the ACCP Annual Meeting. Often, these awards allow students and residents to present their scholarship in the form of a platform presentation at the PRN business meeting. At the Annual Meeting, the PRN business meeting provides a way to engage all student, resident, and fellow members in networking opportunities. Resident, student, and fellow members may also contribute articles to the PRN's biannual newsletter, which provides these members with an opportunity for writing and scholarship. One example of this is the article below, which is the result of a collaboration between one of the PRN's resident members and another full pharmacist member. Continued opportunities for scholarship are available for those involved in the PBRN Research Committee, which is working to develop an active research study within the PRN.

Key Updates in the 2016 CHEST Guidelines for Antithrombotic Therapy for VTE Disease

The American College of Chest Physicians is changing its approach to updating guidelines for antithrombotic therapy. The new guidelines will be released as a series of articles that will be maintained and updated online to remain current, following a "Living Guidelines Model."[1] The first article in the series addresses antithrombotic therapy for venous thromboembolism (VTE). Key changes are summarized in the table below.

The most significant update concerns the role of non–vitamin K antagonist oral anticoagulants (NOACs) for VTE. The ninth edition of the antithrombotic therapy guidelines (AT9) recommended vitamin K antagonists or low-molecular-weight heparin (LMWH) over NOACs.[2] This recommendation was based on weak evidence for only two NOACs, dabigatran and rivaroxaban. Today, four NOACs are approved for VTE (dabigatran, rivaroxaban, apixaban, and edoxaban).[3] Evidence suggests that NOACs are noninferior to warfarin for reducing the risk of recurrent or fatal VTE. Dabigatran's bleeding profile is similar to warfarin's, whereas rivaroxaban, apixaban, and edoxaban are associated with less major bleeding than warfarin in VTE studies.[4] Atrial fibrillation studies show higher rates of gastrointestinal (GI) bleeding with dabigatran, rivaroxaban, and edoxaban than with warfarin; however, more intracranial bleeding occurred with warfarin.[3] Apixaban is the only agent to show superiority for both GI and intracranial bleeding in atrial fibrillation studies. Because NOACs have efficacy similar to warfarin for VTE and similar or superior overall bleeding profiles, the 10th edition of the antithrombotic therapy guidelines (AT10) recommends these agents over warfarin for patients without cancer.[3] LMWH is still preferred for patients with cancer because of its superiority to warfarin for reducing the recurrence of VTE in the CLOT trial.[5] No head-to-head studies have compared LMWH with NOACs in patients with cancer.

The use of aspirin for extended treatment of VTE is a newly addressed topic in the revised guidelines. Although aspirin is not thought to be equivalent to anticoagulation for indefinite treatment of VTE, if a patient with an unprovoked proximal deep venous thrombosis (DVT) or pulmonary embolism (PE) decides to discontinue anticoagulation, aspirin can be considered as an alternative to prevent the recurrence of VTE.[3] When results from studies of aspirin versus placebo were combined for analysis, the overall risk of VTE recurrence was reduced by more than one-third.[6] This is in contrast to an 80% reduction in VTE recurrence with continued anticoagulation.[3]

AT10 also discusses the management of VTE that recurs while the patient is taking anticoagulant therapy. Unfortunately, most of the data are from studies of patients with cancer, and the quality of evidence for this topic is low because of a lack of randomized prospective studies. Because evidence from the CLOT trial showed a decrease in VTE recurrence on LMWH compared with warfarin,[5] AT10 states that patients who have had a VTE while taking a vitamin K antagonist or NOAC should be switched to an LMWH, at least temporarily.[3] Providers should evaluate potential causes for the VTE such as nonadherence to therapy, drug interactions that may have decreased the effect of the agent, and underlying malignancy. If a VTE occurs while the patient is taking an LMWH, the LMWH dose should be increased by about one-fourth to one-third. Evidence for this recommendation consists of a retrospective cohort study of patients with active malignancy who had a recurrent VTE while taking a vitamin K antagonist or an LMWH.[7] Patients were treated by increasing the LMWH dose or switching them from a vitamin K antagonist to an LMWH. Results show that 8.6% of 70 patients had a second recurrent VTE during the 3-month follow-up period.[7]

AT9 recommended early discharge over the standard discharge time (e.g., after 5 days of treatment) for low-risk patients with a PE who have adequate home circumstances.[2] Recent meta-analyses have provided more support for the treatment of acute PE at home for stable

patients.[3] Therefore, the new recommendation is for low-risk patients to be treated at home or discharged early from the hospital. Patients must be clinically stable with good cardiopulmonary reserve; they must also be free of contraindications to therapy with the expectation that they will be adherent to therapy and feel well enough to be treated at home.[3]

Other notable recommendations are addressed in this update as well. Compression stockings are no longer recommended for postthrombotic syndrome (PTS) prevention; however, they may still be used for acute or chronic symptoms of PTS.[3] The authors suggest performing serial imaging of isolated distal DVTs for 2 weeks rather than anticoagulate if no severe symptoms or risk factors for DVT extension are present (e.g., positive D-dimer, active cancer, thrombosis close to the proximal vein).[3] Clinical surveillance is suggested for patients with a subsegmental PE with no proximal DVT who are at low risk of DVT recurrence; anticoagulation is suggested if the risk is considered high.[3] Much of the evidence supporting all the recommendations in this update is of low or moderate quality (grade B or C), and only 37% are strong recommendations. Because no high-quality, grade A evidence was included in this update, there remains a need for stronger evidence to help direct VTE management, especially with the increasing use of NOACs.

Table. AT9 vs. AT10

AT9[a]	**AT10**[b]
Long-term (≥ 3 months) therapy for DVT of the leg or PE and no cancer: VKA therapy preferred to LMWH and LMWH preferred to dabigatran or rivaroxaban	Long-term (≥ 3 months) therapy for DVT of the leg or PE and no cancer: dabigatran, rivaroxaban, apixaban, or edoxaban preferred to VKA therapy and VKA therapy preferred to LMWH Anticoagulant need not be changed after 3 months
Long-term (≥ 3 months) therapy for DVT of the leg or PE and cancer: LMWH preferred to VKA therapy and VKA preferred to dabigatran or rivaroxaban	Long-term (≥ 3 months) therapy for DVT of the leg or PE and cancer: LMWH preferred to VKA therapy, dabigatran, rivaroxaban, apixaban, or edoxaban
Not addressed	Patients with an unprovoked proximal DVT or PE who are discontinuing anticoagulant therapy and have no contraindication to aspirin: aspirin suggested over no aspirin to prevent recurrence
Not addressed	Patients with recurrent VTE receiving VKA therapy (in the therapeutic range) or receiving dabigatran, rivaroxaban, apixaban, or edoxaban (and believed to be adherent): switch to treatment with LMWH at least temporarily Patients with recurrent VTE receiving long-term LMWH (and believed to be adherent): increase LMWH dose by about one-fourth to one-third
Patients with low-risk PE and adequate home circumstances: early discharge preferred to standard discharge time (e.g., after first 5 days of treatment)	Patients with low-risk PE and adequate home circumstances: treatment at home or early discharge preferred to standard discharge time (e.g., after first 5 days of treatment)

[a]Kearon C, Akl EA, Comerota AJ, et al. Antithrombotic therapy for VTE disease: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest 2012;141(2 suppl):e419S-94S.

[b]Kearon C, Akl EA, Ornelas J, et al. Antithrombotic therapy for VTE disease: CHEST guideline and expert panel report. Chest 2016;149:315-52.

DVT = deep venous thrombosis; LMWH = low-molecular-weight heparin; PE = pulmonary embolism; VKA = vitamin K antagonist; VTE = venous thromboembolism.

References

1. Heffner JE. Update of antithrombotic guidelines: medical professionalism and the funnel of knowledge. Chest 2016;149:293-4.
2. Kearon C, Akl EA, Comerota AJ, et al. Antithrombotic therapy for VTE disease: Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines. Chest 2012;141(2 suppl):e419S-94S.
3. Kearon C, Akl EA, Ornelas J, et al. Antithrombotic therapy for VTE disease: CHEST guideline and expert panel report. Chest 2016;149:315-52.
4. Wadhera RK, Russell CE, Piazza G. Cardiology patient page. Warfarin versus novel oral anticoagulants: how to choose. Circulation 2014;130:e191-3.
5. Lee AYY, Levine MN, Baker RI, et al. Low-molecular-weight heparin versus a coumarin for the prevention of recurrent venous thromboembolism in patients with cancer. N Engl J Med 2003;349:146-53.
6. Simes J, Becattini C, Agnelli G, et al. Aspirin for the prevention of recurrent venous thromboembolism: the INSPIRE collaboration. Circulation 2014;130:1062-71.
7. Carrier M, Le Gal G, Cho R, et al. Dose escalation of low molecular weight heparin to manage recurrent venous thromboembolic events despite systemic anticoagulation in cancer patients. J Thromb Haemost 2009;7:760-5.

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