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## 9th National Conference: May 3-5 in Chicago

The Anticoagulation Forum's 9th National Conference on Anticoagulation Therapy is just three months away on May 3-5, 2007 in Chicago, Illinois at the Chicago Marriott Downtown Magnificent Mile. The conference provides unique opportunities to meet with colleagues from around the world with wide-ranging anticoagulation research interests and expertise in the diagnosis and treatment of thrombotic disorders. If you haven't already done so, please register on-line at our website [www.acforum.org](http://www.acforum.org).

Topics will include point of care testing and home monitoring, anticoagulant-related bleeding, cancer and venous thromboembolism, atrial fibrillation, mechanical heart valves and antithrombotic therapies, Xa and IIa inhibitors, genetics and warfarin dosing including the FDA's perspective, and many others.

In addition to the general sessions, there will be Meet-the-Expert small group sessions, poster presentations of original research, and exhibitors. We have also added a Saturday lunch and afternoon session focused on improving patient quality of life that will include presentations and an interactive discussion between thrombosis and treatment advocacy groups, health care providers, and patients.

**This year we have simplified the process for submitting abstracts of original research. Abstracts can be submitted online at [www.acforum.org](http://www.acforum.org). The due date for abstracts is March 9. Please visit the website for complete details.**

**Conference participants are also invited to submit written reports of interesting and/or challenging cases. The best six cases will be selected and presented at the conference during a Meet-the-Expert session. Please email your case, limited to 250 words, to [Elizabeth.Goldstein@bmc.org](mailto:Elizabeth.Goldstein@bmc.org) by April 1.**

We look forward to seeing everyone in Chicago! If you have any questions regarding the conference, please contact Liz Goldstein in the Anticoagulation Forum office at 617-638-7265 or [Elizabeth.Goldstein@bmc.org](mailto:Elizabeth.Goldstein@bmc.org). ■

## Changing of the Guard

*Jack Ansell, MD*

It is with a sense of pride and accomplishment that I look back on the last 16 years of the Anticoagulation Forum. Started in response to a perceived need for professional networking and education for anticoagulation clinic providers, the Forum has grown beyond my most optimistic expectations. With more than 3500 members representing approximately 1500 anticoagulation clinics in the United States and a small number world-wide, the Forum has proven to be an important source of information and education for its members and a strong advocate for the advancement of expertly managed oral anticoagulation therapy. What has the Forum accomplished in these 16 years as an advocate for improved therapy?

- The Forum has consistently promoted the concept of anticoagulation clinic management of oral anticoagulation by developing guidelines, by sponsoring continuing education, by serving as a venue for professional networking, by serving

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## Welcome From New President of AC Forum

*David Garcia, MD*



It is with great humility that I take over as the new president of the Anticoagulation Forum. Those of you who know me are aware that I am strongly committed to the mission of this organization: to facilitate information exchange, medical education and scientific investigation that will enhance the care of anticoagulated patients.

Before I share some thoughts about the future, I wish to acknowledge the outstanding leadership that Dr. Jack Ansell has provided

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# Commentary: Fixed-Dose Unfractionated Heparin for the Treatment of Venous Thromboembolism?

Kearon C, Ginsberg JS, Julian JA, Douketis J, Solymoss S, Ockelford P, Jackson S, Turpie AG, MacKinnon B, Hirsh J, Gent M; Fixed-Dose Heparin (FIDO) Investigators. Comparison of fixed-dose weight-adjusted unfractionated heparin and low-molecular-weight heparin for acute treatment of venous thromboembolism. *JAMA*. 2006 Aug 23;296(8):935-42.

*Prepared by Mark Crowther, MD*

Traditional therapy for acute, objectively confirmed venous thromboembolism consists of a rapidly acting parenteral anticoagulant administered for a minimum of four to five days and warfarin administered beginning on the day of diagnosis and maintained for a minimum of three months. With such therapy, the risk of recurrent venous thromboembolism while receiving anticoagulants is very low (less than 5% if therapeutic effect is achieved). The “cost” of this treatment is hemorrhage; the risk of major or life-threatening hemorrhage remains controversial, but is probably less than 5%.

Traditionally, the rapidly acting parenteral anticoagulant used in the acute management of deep vein thrombosis and pulmonary embolism has been unfractionated heparin administered intravenously and monitored to obtain a therapeutic activated partial thromboplastin time (APTT). One of the major advances in antithrombotic therapy in the last 20 years has been the development and widespread use of low molecular weight heparins (LMWH). LMWHs offer significant advantages over unfractionated heparin including predictable pharmacokinetics (allowing weight based dosing without monitoring of anticoagulant effect) and a prolonged half-life (allowing once daily subcutaneous dosing). These pharmacologic attributes allow many patients to be treated out of hospital, a possibility that did not exist in the era of IV unfractionated heparin. Disadvantages of low molecular weight heparin include cost and the potential for bioaccumulation and bleeding in patients with impaired renal function.

The FIDO study (Kearon C, Ginsberg JS, Julian JA et al. Comparison of fixed-dose weight-adjusted unfractionated heparin and low-molecular-weight heparin for acute treatment of venous thromboembolism. *JAMA* 2006;296:935-42) presented by Kearon and colleagues challenges our traditional dogma which has developed around the treatment of acute deep vein thrombosis. In this randomized, open-label study which enrolled 708 patients with acute, objectively confirmed venous thromboembolism (DVT or PE) from 6 university-affiliated clinical centers in Canada and New Zealand the authors found that when administered in a weight-adjusted fashion, by subcutaneous administration twice daily and without any form of anticoagulant monitoring, unfractionated and low molecular weight

heparin had similar safety and efficacy profiles.

Specifically, recurrent venous thromboembolism occurred in 13 patients in the unfractionated heparin group (3.8%) compared with 12 patients in the low-molecular-weight heparin group (3.4%). Major bleeding during the first 10 days of treatment occurred in 4 patients in the unfractionated heparin group (1.1%) compared with 5 patients in the low-molecular-weight heparin group (1.4%). Treatment was administered entirely out of hospital in 72% of the unfractionated heparin group and 68% of the low-molecular-weight heparin group.

Commentators have suggested that the low rate of recurrent thrombosis in both the unfractionated and low molecular weight heparin group suggested that the patient population enrolled in the study was selected to be at low risk of recurrence - if true, this would limit the generalizability of the results. However, an “on treatment” recurrent venous thromboembolic rate of between 3% and 4% is very consistent with contemporary studies. This low rate of recurrence likely reflects excellent control of oral anticoagulant therapy rather than the efficacy of the acute treatment.

It is important to note that the dose of unfractionated heparin was very aggressive - an initial dose of 333 units per kilogram followed by a dose of 250 units per kilogram every 12 hours. For an average 80 kg person this translates into an initial subcutaneous “bolus” subcutaneous dose of unfractionated heparin of 26,600 units, and the maintenance dose of 20,000 units every 12 hours. Although not routinely measured in the study, six-hour post dose APTT values often exceeded the usual therapeutic range and in many cases were greater than 150 seconds. Even when detected, such markedly prolonged APTT values were not to be used as an indication for dose reduction; irrespective of the APTT, the dose of unfractionated heparin was maintained at 250 units per kilogram twice daily. LMWH doses were consistent with the products’ package insert.

This study has several important implications for the delivery of anticoagulant care to patients with acute venous thromboembolism. First, it highlights the fact that there is very little evidence that monitoring APTT values to detect excessive anticoagulation is of any use whatsoever. In fact, adjusting heparin doses based on an excessively prolonged APTT value may actually result in systematic under-anticoagulation of patients who are receiving the combination of heparin and warfarin (since warfarin mildly prolongs the APTT even at “therapeutic” INR levels). Second, this study supports investigations done mostly in the 1970s and 1980s wherein it was found that subcutaneously administered unfractionated heparin (albeit with APTT monitoring) was an effective treatment for acute venous thromboembolism. Finally, this study highlights the fact that patients with a DVT and those with PE can be treated using an identical treatment algorithm while also providing evidence that the vast majority of patients with acute venous thromboembolism can be treated entirely in the outpatient setting.

Should this study change practice? It is unusual for a single

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## Confirmation of Indication, Goal INR, and Duration of Therapy on Patient Referral

*Ann Wittkowsky, PharmD*

*Lynn Oertel, RN*

### THE REFERRAL:

A referral to your anticoagulation clinic for a new patient arrives from the GI clinic fellow.

### THE CASE:

A 69 year old woman with a history of ileocecal bowel resection following ischemic bowel obstruction 1 year ago has recently moved to the local area. She presents to the GI clinic as an outpatient to establish care. By report, her past medical history is significant for hypothyroidism and anemia. During this visit, it is discovered that she is taking warfarin and she is automatically referred to the anticoagulation clinic for management. On the referral form, the fellow has written "history of DVT" as the indication for anticoagulation.

### THE PROBLEM:

The Anticoagulation Clinic practitioner who receives the referral needs to confirm the indication for anticoagulation, goal INR, and duration of therapy for this patient. The GI clinic has not obtained the patient's medical records, and the patient denies ever having had a blood clot. Therefore, the medical records from the patient's former primary care provider are ordered, and it is discovered that warfarin was started 1 year ago after the patient developed atrial fibrillation in the ICU following her bowel resection. Since then, several electrocardiograms have confirmed that she is in normal sinus rhythm, and an echocardiogram notes no structural heart disease. She has no risk factors for atrial fibrillation and no history of arterial or venous thrombosis.

### THE SOLUTION:

It appears that this patient was started on warfarin for post-operative atrial fibrillation, but that warfarin should have been discontinued shortly thereafter. There is no need for this patient to be chronically anticoagulated, and warfarin can be discontinued. Through a focused patient assessment, the anticoagulation clinic practitioner learned important information from the patient. This prompted further investigation to determine the initial course of events and was an important step to validate information appearing on the referral form. This case illustrates the importance of confirming the indication for anticoagulation, goal INR, and duration of therapy for all patients referred to anticoagulation clinics. ■

as a platform for presenting original research, by supporting and facilitating research of models of anticoagulation care, by advocating for reimbursement of clinical services with third party payers, and by serving as the platform for the development of an independent certification body for anti coagulation providers, the only such group in the world.

- The Forum promoted the use of the INR when the PT ratio was still the dominant means of monitoring warfarin therapy.
- The Forum has sponsored and organized nine biannual national CME symposia for its members.
- The Forum has published a newsletter highlighting important developments in the discipline of antithrombotic therapy.
- The Forum has developed a web site for its members and the public to access information and to locate clinic sites around the world.
- The Forum has promoted the concept of point-of-care INR monitoring, patient-self testing and patient-self management and has advocated for appropriate reimbursement of clinical services.
- The Forum has worked to represent the interests of anticoagulation clinics before government agencies.
- The Forum has worked collaboratively with other advocacy groups to promote public awareness of the problem of venous thromboembolism and to promote the development of patient-based interest groups to lobby for better care and better access to care.

Thus, it is with great satisfaction, a little sadness, and some relief that I hand the reigns of the Anticoagulation Forum to a new and very capable leader, Dr. David Garcia. As the new President, David will work closely with the Board of Directors to move the Forum to new heights, take on new projects, and consistently be a service to its members, keeping in mind that the ultimate goal is advancing and improving the management of oral anticoagulation therapy.

I remain forever thankful to the members of the Anticoagulation Forum who deliver outstanding care to the millions of individuals treated with the coumarin anticoagulants, and who prove on a daily basis, that anticoagulation care is only as good as the management exercised to maintain patients in therapeutic range. I am also eternally grateful and indebted to two individuals who have served the Forum so well: Barbara Ganick, the first Executive Director, followed by Elizabeth Goldstein, the current Executive Director of the Forum. Their energy, loyalty, and force of personality have been the force behind the Forum's phenomenal growth and its stature in the medical community. ■

## From the Office

I would like to formally welcome Dr. David Garcia as the new President of the Anticoagulation Forum. David's enthusiasm, able leadership, and commitment to the field of anticoagulation will ensure the continued strength of the AC Forum. David, Jack and I have been working together to ensure a smooth transition of leadership and I look forward to working with David and the rest of the Board as we move forward.

At this time I would like to acknowledge the tremendous contribution that Dr. Jack Ansell has made to the field of anticoagulation management and specifically to the Anticoagulation Forum. As founder and president for the past 16 years, Jack's tireless efforts have directly improved the care of millions of patients. Jack's leadership, wisdom and humor are an inspiration to all of us as we continue to carry out his vision.

Finally, if you have not yet registered for our upcoming conference, please do so. We have planned an exciting conference this year with dynamic speakers, new research presentations, lively round table discussions and more. See you in May!

The following is the Anticoagulation Forum's 2007 Board of Directors:

<b>President</b>	David Garcia, MD
<b>Vice President</b>	Edith Nutescu, PharmD
<b>Treasurer</b>	Geno Merli, MD
<b>Clerk</b>	Jack Ansell, MD
<b>Board members</b>	Richard Becker, MD
	Mark Crowther, MD
	Elaine Hylek, MD
	Alan Jacobson, MD
	Amir Jaffer, MD
	Stephan Moll, MD
	Lynn Oertel, RN
	Ann Wittkowsky, PharmD

Elizabeth Goldstein  
elizabeth.goldstein@bmc.org

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### Welcome From New President

past 16 years. It is remarkable to think about how the "anticoagulation landscape" must have looked when the AC Forum held its first meeting in 1991: the efficacy of warfarin to prevent strokes in patients with AF was still being debated, low molecular weight heparins were not used in the United States, and the concept of a "Coumadin Clinic" or "Anticoagulation Management Service" was virtually unheard of. Dr. Ansell's foresight that a group such as the AC Forum would thrive and provide so many benefits to both patients and health care providers establishes him, in my mind, as a true visionary. After such a long tenure of steady, capable leadership, I know that he steps down from the Presidency with great pride in the community he founded.

As I assume the helm of this organization, I hope that all of you share my excitement about the future. Our patients who have suffered (or are at risk for) thromboembolic disease have good things to which they can look forward. On the one hand, new tools and techniques that have the potential to make warfarin safer and more tolerable (software, self-testing devices, genetic discoveries) continue to emerge. In addition, several promising new oral anticoagulants

(some of which may be safer or more practical than warfarin) are advancing quickly through the clinical trials process. Although it is not possible to predict exactly how we will combat thromboembolism 5-10 years from now, it seems almost certain that the quantity and quality of our options will only increase. Your patients are lucky to have dedicated individuals like you to help ensure they get the best care available.

Regarding upcoming AC Forum activities, rest assured that the newsletter, the website and the biannual meeting will continue as always. I am very pleased that Ms. Elizabeth Goldstein has agreed to remain as our very capable Executive Director. During 2007, I plan, along with the Board of Directors, to produce an updated version of the "Consensus Guidelines for Coordinated Outpatient Oral Anticoagulation Therapy Management" published 10 years ago by Dr. Ansell and others. If time permits, I would like to consider other new projects. If any of you have specific suggestions for ways we can use the AC Forum to help patients, please send me an email at [davgarcia@salud.unm.edu](mailto:davgarcia@salud.unm.edu). I look forward to seeing many of you at the meeting in Chicago, May 3-5.

## NCBAP Update

For almost 2 years, several of our board members have worked diligently with outside technical and logistical support to develop a web-based recertification examination. We are pleased to announce and launch our new **Online Recertification Process**. This opportunity will facilitate a far easier renewal option for CACPs. Traveling to an examination site will no longer be required.

The Board requires recertification every five years for the CACP credential. Since the online recertification process was not fully developed in 2006, the Board extended the expiration date for all clinicians who had an initial renewal date of 2006 to December 2007. Therefore, all clinicians who originally sat for the certifying examination in either 2001 or 2002, must now seek re-certification either online or sit for the exam in Chicago on May 3, 2007. If you are not sure when your CACP credential expires, please contact Liz Goldstein via email, [Elizabeth.goldstein@bmc.org](mailto:Elizabeth.goldstein@bmc.org).

It's easy to make arrangements to recertify online. The details are available on our website, [www.ncbap.org](http://www.ncbap.org). In brief, obtain an application from the website. Complete and mail it, along with your application fee, to the address provided. (Encounter forms are NOT required for recertification.) You are required to identify an exam proctor in your area. Examples of acceptable exam proctors include academic librarian, public librarian, or a staff member at a national test center (such as Sylvan Learning Centers). Although you may take the exam online, you must take it during one of the scheduled exam dates/time listed on the NCBAP website so that our Exam Support Liaison, Marie Walker, will be available to provide technical support during your exam. There are typically 2 online exam dates each month. It is your responsibility to ensure that your proctor will be available for the 2.5 hour duration of the exam on your selected exam date. For more detail, visit the NCBAP website at [www.ncbap.org](http://www.ncbap.org).

Calling all CACPs! Do we have your current mailing address and other contact information? Your home address is preferred. Please contact Liz Goldstein at the email listed above. Or, you can also send this information to the "Contact Us" link from our website.

Lastly, we are pleased to recognize and announce the names of our

newest CACPs and those that recently recertified at the October and December exams in 2006:

Jan Akus.....	Norwich, CT
Lauren Bloodworth .....	Madison, MS
Jennifer Bow .....	Muncie, IN
Nathan Clark .....	Thornton, CO
Dawn Clark .....	Erie, CO
Steven Cleary.....	Erie, CO
Rachel Corneau.....	Methuen, MA
Richard Creamer.....	Golden, CO
Mary Dowd .....	Commerce City, CO
Melissa Egan .....	San Diego, CA
Jennifer Friend.....	Aurora, CO
Brian Grover .....	Nottingham, MD
Charmaine Hunt.....	Lake Oswego, OR
Michelle Hutchens .....	Denver, CO
Samuel Johnson .....	Denver, CO
Lisa Johnson .....	Austin, MN
Karissa Kim .....	Mason, OH
Renee Koski .....	Ishpeming, MI
Shannon Lahn .....	Mill Creek, WA
Leslie Layman.....	Ellicott City, MD
Wendy Lopez.....	Westminster, CO
Kathleen McCool .....	Lakewood, CO
Anna Mucker .....	Spokane, WA
Alma Navarro .....	Thornton, CO
Jessica Praska .....	Denver, CO
Kevin Przybylski .....	Auburn, MI
Cheryl Ray.....	Poynette, WI
Michelle Rose .....	San Marino, CA
Barbara Sabatino .....	Perry Hall, MD
Martin Senser.....	Broomfield, CO
Josephine Steevens.....	Clinton, MS
Shelly Van Note.....	Madison, WI
Tejvinder Virdi .....	Arvada, CO
Mary Wilson .....	Lakeside Park, KY
Daniel Witt .....	Longmont, CO
Paul Yaft.....	Aurora, CO
Weeranuj Yamreudeewong.....	Cheyenne, WY

For more information on the Anticoagulation Forum, please visit our website at: [www.acforum.org](http://www.acforum.org)



## Commentary: Fixed-Dose Unfractionated Heparin

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to result in major changes in clinical practice because clinicians generally wish to see confirmation before exposing patients to potentially toxic therapies. That having been said, it is unlikely this study will be repeated given the predictable absence of pharmaceutical interest in sponsoring a confirmatory trial. Additionally, implementing this therapy would require clinicians to ignore the APTT which has entered clinical lore as a test that must be carefully monitored in patients receiving heparin. However, the results of the study are clear; unfractionated and low molecular weight heparin had similar efficacy and safety profiles.

The primary utility of this study likely lies in the fact it provides another method to treat venous thromboembolism. Potential advantages of unfractionated heparin include a lower cost, wide availability and many years of clinical experience. Disadvantages of unfractionated heparin include the need for twice daily administration (as compared with once daily administration of low molecular weight heparin), the potential for heparin-induced thrombocytopenia (although there was no evidence of a differential risk of HIT in the FIDO study), and a lack of clinician comfort with the administration of unfractionated heparin without APTT monitoring. The need to fill syringes with unfractionated heparin may also be

a disincentive, particularly for elderly patients or others who may have trouble drawing up precise volumes of a medication.

Although not directly addressed in this study, one group for whom fixed-dose unfractionated heparin might be especially useful is patients with impaired renal function. Although a separate study would be needed to test the hypothesis that it is safe to withhold APTT testing when unfractionated heparin is given to such patients, it is widely known that “usual doses” of enoxaparin should not be used in patients with markedly impaired renal function. Additionally, unfractionated heparin may be used in patients who cannot afford LMWH.

In summary, this study suggests that weight-adjusted, subcutaneously administered unfractionated heparin is highly effective for the treatment of acute venous thromboembolism in unselected outpatients with symptomatic disease. This study provides clinicians with another proven therapy for such patients and may be of particular utility in selected patient groups such as those with impaired renal function and those who are unable to afford LMWH.

*For another interpretation of the results of the FIDO study please see the editorial comment by Goldhaber and Berkwitz in the December 19 issue of the Annals of Internal Medicine (Goldhaber SZ, Berkwitz M. Trials that matter: Can patients with venous thromboembolism be treated with fixed-dose subcutaneous unfractionated heparin? Ann Intern Med 2006;145:929-931).* ■