

Perioperative Management of Anticoagulant Therapy



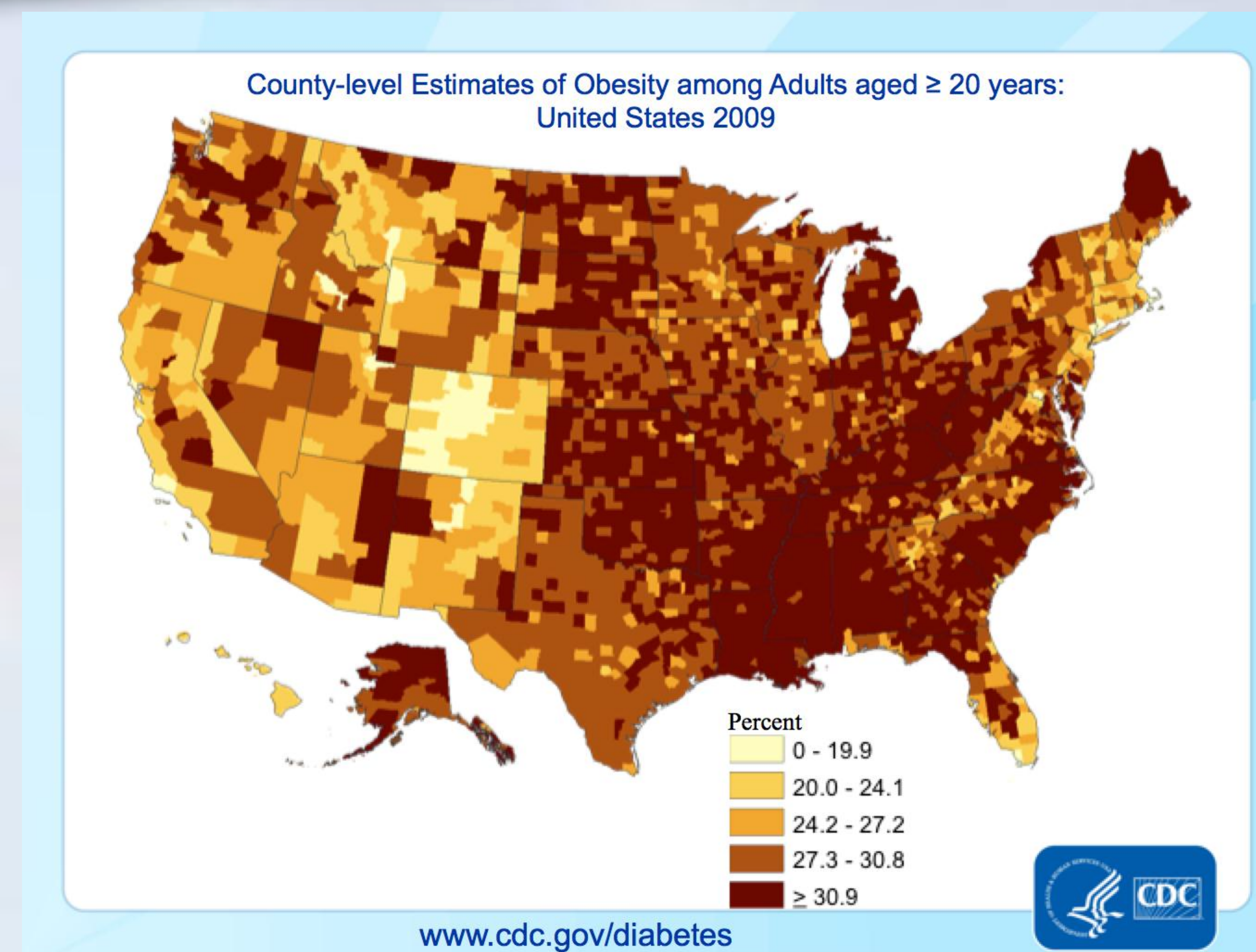
Jennifer M. Kim, Dr. Alexis D. Armour
University of Missouri-Columbia School of Medicine
Division of Plastic Surgery, Department of Surgery

Introduction

There is a lack of consistent recommendations regarding perioperative anticoagulant management among different disciplines and even within disciplines. With the growing rates of obesity seen in this country, with more prevalence in Mid-Missouri, the number of people requiring therapy with anticoagulants to reduce the comorbidities associated with obesity is on the rise. In order to better care for patients and improve patient health outcome, physicians need to understand and shift aspects of their practice to accommodate the evolving patient demographics. By reviewing current literature regarding perioperative management of patients under anticoagulant therapy, we wanted to assess the standard of care among different specialties.

Purpose

1. Describe current clinical practice of perioperative management of anticoagulation in a heterogeneous patient population
2. Use collected information to build parameters for retrospective chart review and prospective study
3. Measure complication rates among patients for different soft tissue surgeries, with different perioperative anticoagulation treatment and different comorbidities
4. Establish clinical guidelines for perioperative management of anticoagulant, antithrombotic, antiplatelet agents, among patients undergoing plastic or wound surgery



Methods

The study design involves identification of surgical patients on the plastic surgery and burn surgery services chart review from 2010 to 2014 (retrospective and prospective). Identification of previous cases will be done using our billing records, looking for the simultaneous presence of surgical codes and anticoagulation diagnostic codes. The following inclusion and exclusion criteria will be used:

•**Inclusion criteria:** Elective surgery performed by plastic surgery or burn surgery surgeons; need for anticoagulation pre- and post-operatively; post-operative follow-up completed in our institution.

•**Exclusion criteria:** Age < 30; patient's presenting with lacerations, gun shot wounds; unable to collect required data from medical chart.

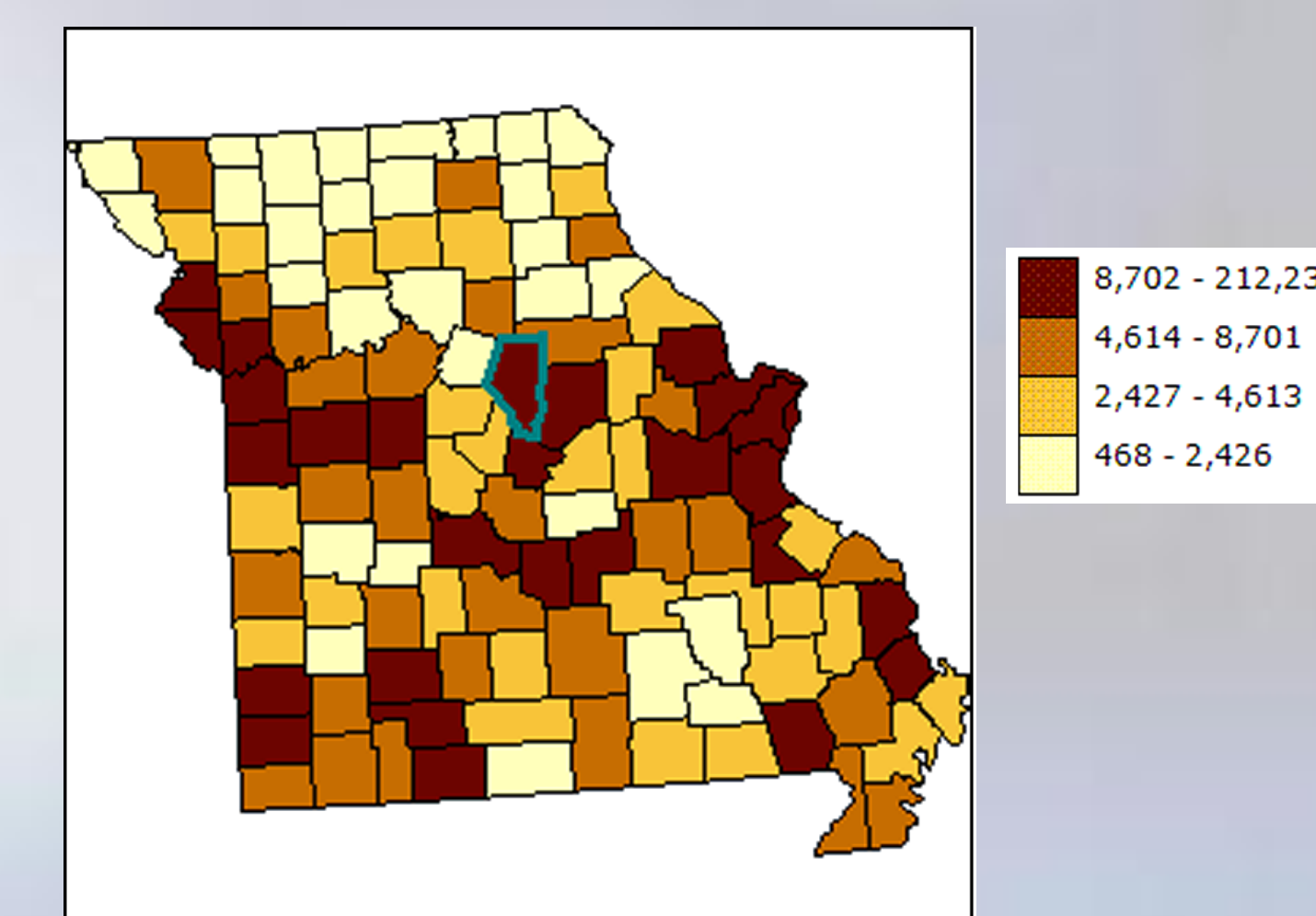
Patient and surgical data will be collected from the medical chart in order to describe our current practice of perioperative management of anticoagulation and its consequences. The patient's medical chart will be reviewed at regular intervals to ensure that the patient is not following up with alternate services for medical complications. The following data will be collected on all patients (if data unavailable, this will be noted):

•**Patient characteristics:** Age, gender, comorbidities, indication for and type of anticoagulation therapy (ACT), duration of ACT, blood pressure (BP)/international normalized ratio (INR)/partial thromboplastin time (PTT) before surgery, BP/INR/PTT after surgery, date/time of last preoperative dose of blood thinner, date/time of first post-op dose of blood thinner, risk factors for deep venous thrombosis (DVT).

•**Surgery characteristics:** Anatomical location(s) of surgery, type of surgery, duration of surgery, method of hemostasis used, anti-DVT measures taken.

•**Outcomes:** Intraoperative estimated blood loss, follow-up dates/times, drop in hemoglobin post-operatively, local wound complications, systemic complications, type of complication, severity of complication, need for reoperation, need for readmission or prolongation in hospital stay, date of complication.

2009 Estimates of the Number of Adults who are Obese in Missouri



Results

Based on the literature review, there is a lack of consistent recommendation regarding perioperative anticoagulant management among dermatology, ophthalmology, cardiovascular and dental surgery. There are different scenarios in which anticoagulants need to be stopped for a period of time and the most serious complication is the increased risk of thromboembolic events. Debates stem from the issue of stopping anticoagulant therapy before surgeries.

Several prospective and retrospective studies have concluded continued treatment with blood thinners perioperatively in patients undergoing oral and cutaneous surgeries is not associated with an increase in surgical complications. In one literature review of dermatologic surgeries, 13 articles showed no documented surgical complications of continuous treatment with blood thinners perioperatively and one article showed no complication as a result of aspirin but found statistically significantly higher complications with warfarin in comparison to aspirin and the control population. Currently, the American College of Chest Physicians recommends stopping anticoagulants about 5 days before surgery over stopping them within a shorter time before surgery to allow time for the INR to normalize, with specific guidelines for special patient populations.

Conclusions

In the realm of plastic surgery perioperative management, there are little to no recommendations regarding anticoagulant therapy. Due to the need for a standardized approach, we propose a retrospective and prospective study evaluating the risks and benefits associated with the continuation of anticoagulants perioperatively in different surgeries within the plastic surgery department.