management of thyroid storm when PTU is preferred.
- I^{131} is utilized in nonpregnant patients with glands larger than 40 grams
- Smoking increases the risk of Graves' Ophthalmopathy

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TITLE: EARTHQUAKES SHAKE WHICH ORGAN THE MOST?

Speaker: Ramin Tolouian, MD, Assistant Professor of Medicine, Department of Internal Medicine, Texas Tech University Health Sciences Center, El Paso

Introduction: Many victims of earthquakes develop kidney problems a few days after the event due to rhabdomyolysis leading to the crush syndrome. The percentage of patients who were registered as having renal failure after the earthquake in Marmara, Turkey and who required at least one form of renal replacement therapy has been reported to have been ~75% and mortality among patients who required dialysis has been reported at between 14 and 17.2%.

Objectives:
- Review the basic components of the Crush Syndrome
- Discuss the pathophysiology of rhabdomyolysis
- Review the basic concepts of seismo-nephrology
- Describe the use of intravenous and oral therapy in renal failure

Discussion: Ideally, patients with crush injuries should receive i.v. fluid, to induce diuresis, and possibly also bicarbonate, to maintain their urine pH in the alkaline range. Since this is frequently not feasible in the context of mass disaster using Oral solution could be a promising option.

Conclusions/take home points
- Rhabdomyolysis can be fatal.
- Hydration should be initiated as soon as possible.
- Consider oral solution as an option.
- Prior to fasciotomy, think twice.

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TITLE: MEDICAL ERROR AND SAFETY OF THE BLOOD SUPPLY

Presenter: Quentin Eichbaum MD. PhD, MPH, MFA, FCAP; Department of Medical Education, Paul L. Foster School of Medicine, El Paso, Texas

Introduction: Awareness of high rates of medical error and the ensuing associated morbidity and mortality has only fairly recently been raised. How such error occurs is a mix of both technical and human error. While of the focus and funding has been on introducing improvements on the technical side of error, most of the error is actually due to more readily rectifiable human/behavioral factors.

Objectives:
- Identify the common cognitive and systems errors in medical practice
- Discuss the 'technical' and 'human' root causes of medical error
- Describe the causes of error affecting safety of the blood supply
- Discuss steps taken to reduce medical error and to improve safety of transfusion practice and of the blood supply
- Explain the concept of 'hemovigilance' and how it might improve blood and transfusion safety.

Discussion: Medicine can learn from improvements in safety in the aviation industry. Improvements in safety in anesthesia were implemented both through technical and human behavioral improvements. Similarly, the safety of the blood supply was brought about through technical and such human improvements. For instance, in 1970 hepatitis technical screening and volunteer-only donors were introduced as safety improvements. However, there is still much we do not understand about error and safety issues in transfusion and blood banking. To achieve such improvements, hospitals should participate in the NIH/CDC Hemovigilance programs.

Conclusions/take home points:
- Medical error is due to both technical and human behavioral factors; to improve safety we need to act on both fronts
- The safety transfusion and of the blood supply could be improved by participating in hemovigilance network program.

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TITLE: ORAL ANTICOAGULANTS: PAST, PRESENT, AND FUTURE

Presenter: Dale Quest, PhD, Associate Professor of Medicine, Paul L Foster School of Medicine, Department of Medical Education

Introduction: Presentation of this topic coincides with FDA approval of the oral direct thrombin inhibitor, dabigatran, for prevention of stroke in atrial fibrillation, based on the results of the RE-LY trial in which warfarin was an active comparator. An analogous trial called ROCKET-AF that also pitted an oral direct Xa inhibitor, rivaroxiban against warfarin has recently been completed. It is one of two oral direct Xa inhibitors currently awaiting market authorization by the FDA; still more in development. Prior to completion of RE-LY and ROCKET-AF in late 2008, dabigatran and rivaroxiban both obtained regulatory Notice of Compliance in Canada for prevention of Venous Thrombotic Events in patients undergoing total hip or total knee replacement. An expert advisory committee considered both drugs for that indication and subsequently turned down dabigatran, but recommended rivaroxaban. Without that recommendation, a drug will have no market in Canada. With the results of RE-LY and ROCKET-AF in hand, Boehringer and Bayer are back in their respective queue for prevention of stroke in patients with AF in Canada, while dabigatran is already working aggressively to gain market share over warfarin for that indication here in the United States.

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Objectives: Using warfarin as a reference, compare newer oral anticoagulants in terms of their relative effectiveness, toxicity, ease of use, and value for money for the same clinical indications.

Discussion: Although LMWH has largely replaced warfarin in EU, across NA warfarin remains in widespread use. Is its end in sight? Will a US market for the oral direct IIa inhibitor, dabigatran be short-lived, only to be cannibalized by oral direct Xa inhibitors, rivaroxaban et entourage?

Conclusions/take home points

- Past and present, warfarin is effective, affordable, with decades of experience defining its benefits and risks for multiple indications.
- Warfarin lacks many attributes of an ideal anticoagulant, but as the most established orally active option, it has an edge over parenteral anticoagulants for long-term outpatient use.
- Several orally active anticoagulants which more closely approximate the ideal are poised to enter clinical practice in rapid succession.
- Sorting out how they stack up against each other during incremental approvals for each indication will be a challenge going forward.