

Anticoagulants: Life Saving and Lethal

Medications to prevent clotting are essential treatment for many medical and surgical conditions, such as clots in the legs (arterial or venous thrombus), heart attacks, and blood clots in the lung (pulmonary embolus). They are also used to prevent strokes in atrial fibrillation or when there is a clot in the heart from sluggish blood flow.

All anticoagulants have an increased risk of bleeding. The most severe complication being an intracranial hemorrhage. Gastrointestinal bleeding is also frequently seen. It can be profuse and result in oozing from the lining of the gastrointestinal tract. Nose bleeds, bruising and hematomas are also common. Serious complications occur when irreversible damage results from compression of vital structures like nerves, spinal cord, brain or heart.

Heparin is the most frequently used intravenous or subcutaneous anticoagulant. When used intravenously it must be closely monitored due to the narrow therapeutic window. Heparin has always been a high risk medication, but in the last few years the Joint Commission has become involved with increasing the safety of this medication when it was added to their annual National Patient Safety Goals.

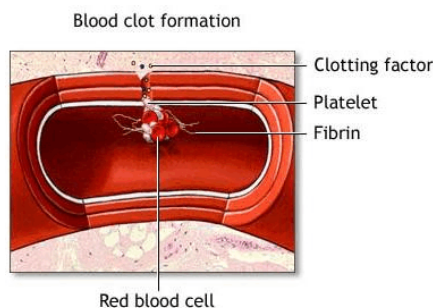
When Heparin is used, the risk of bleeding can be decreased by careful patient selection, careful control of dosages, close monitoring of PTTs, or partial thromboplastin time, and by double checking all calculations, adjustments, lab results, IV pump changes, etc. with another nurse. It is now the standard of care to have Heparin protocols that provide standard boluses calculated by weight and standard adjustments based on PTT or unfractionated heparin results. The

frequency of monitoring is also specified in these protocols.

Heparin is a short acting drug, so if the blood levels are too high, the medication is stopped. If severe bleeding occurs, protamine sulfate can be given to reverse the effects of Heparin.

Another potential complication of heparin administration is "white clot syndrome" also known as heparin induced thrombocytopenia or HIT. When this occurs, the body

makes antibodies against Heparin and causes the very clotting that the drug is given to prevent. Clotting occurs most frequently in veins but can occur in arteries also. If a catheter is present in an extremity, the risk of clotting is increased in that extremity. HIT occurs if platelet counts drop to less than 150,000 or by 50% of pre-Heparin levels. This complication is under-recognized.



Platelet counts should be monitored frequently in patients on Heparin. Any new clot occurring in a patient receiving Heparin should raise suspicion of HIT. Antibodies circulate for 3 to 4 months, so if the patient is exposed to Heparin again during this period, it may lead to rapid HIT. All forms of Heparin should usually be avoided in patients with a history of HIT. There are product liability lawsuits that have been filed that allege that there is inadequate warning of this risk.

Low molecular weight heparins such as Lovenox and Arixtra are also used and carry similar bleeding risks to Heparin.

Coumadin or Warfarin, is an oral anticoagulant. The Protime or PT and INR or international normalized ratio is monitored with this drug. The goal is usually an INR between 2 and 3 for adequate anticoagulation. There are many drug and food interactions with this medication. Patients should not take anything else without approval. The pharmacist should be informed of all supplements, vitamins

and over-the-counter medications. Nonsteroidal anti-inflammatory medications are especially dangerous with this drug. It usually takes at least 2-3 days of treatment to obtain a therapeutic level. Once stable, the INR should be monitored weekly. If medications are added, the level may need to be checked after 2-3 days to make sure it is still in the expected range. An INR that is only slightly elevated may only require stopping or holding the drug for a few days. The risk of intracranial hemorrhage increases dramatically with an INR greater than 4, especially in older patients.

The effect of Coumadin can be rapidly reversed when there is severe bleeding by giving fresh frozen plasma (a blood product with clotting factors) or Vitamin K. Vitamin K is short-acting while Coumadin is long-acting, so additional doses of Vitamin K may be required.

Source: 2010 AALNC Webinar on Anticoagulants ★

New Staffing Guidelines

In December 2010, the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN) published new nurse staffing guidelines to reflect the demands in these settings.

Recommendations in the new guidelines include the following:

- Nurses in labor and delivery units should have only one patient to care for if labor is being induced or if there will be a low tech birth without pain medications.
- Nurses should have fewer new mothers and babies to care for than in the past.
- Two nurses should attend every birth, vaginal or cesarean, one to attend to the mother and one to attend to the baby. Source: www.awhonn.org.

Not all Pressure Ulcers are Avoidable

The National Pressure Ulcer Advisory Panel agreed at a consensus conference in 2010 that there are clinical situations in which the development of pressure ulcers can be unavoidable.

The international panel made up of multiple disciplines and specialties developed a new definition for unavoidable pressure ulcers. "Unavoidable means that the individual developed a pressure ulcer even though the provider had evaluated the individual's clinical condition and pressure ulcer risk factors; defined and implemented interventions that are consistent with individual goals and recognized standards of practice; monitored and evaluated the impact of the interventions; and revised the approaches as appropriate."

Unavoidable situations may include: patients in critical care, with unstable vital signs that may preclude turning and repositioning or patients that refuse to be repositioned.

Source: www.npuap.org, 3/3/10★



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