

BLOOD THINNERS

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Something else we haven't gone over is 'lytics. Hemolytics to be exact. lytic is greek for 'loosen up" We think of it more like something that either loosens up or destroys. So hemolytics are "blood looseners" Hemolytics don't dissolve clots, they simply keep the blood loosened up enough to KEEP from clotting. We need to review blood thinners, anti coagulants, Platelet aggregation inhibitors, etc..... this is a really quick down and dirty review of these meds.

Blood thinners is a big umbrella term for meds that keeps the blood from becoming sluggish. Different medications to this differently on a cellular level.

Platelet aggregation inhibitors (PIAs'): examples include **Aspirin, plavix, and ticlid**. They do just what the med category says it does. Remember platelets are the sticky little cell fragments that looks like liquid butterscotch when it is separated from the rest of the blood. These meds keep the "adhesive" Thromboxane from making the platelets sticky thus preventing platelets from sticking to each other. So, PAIs' don't thin the blood, it just keeps the platelets from sticking to things and each other. Think of platelets as a bunch of people naked at a party and they keep bumping into each other. (awkward!) Okay, now cover everybody in high quality KY Jelly. Now no matter how much they try to rub up against each other there is no friction. They can't stick to each other! This is how PAIs' work. One thing you need to be aware of it **Alka Seltzer** and **Pepto bismol** contains a lot of

aspirin so if you find out your patient has been taking either of these 2 medications, keep in mind about starting an IV, or if they have been in a trauma they could be at risk for increased bleeding.

Heparin can be subcutaneously injected or given IV. Never IM. Heparin attaches itself to the chemical, Antithrombin III and Heparin together will slowly break up clots. Heparin prevents further clots from forming. The test required to check the thin-ness of blood on heparin is called a PTT (partial prothrombin time). The effects of heparin only last 30 minutes to 1 hour so frequent injections (2-3 times a day) or a continuous infusion is necessary to keep the therapeutic effects going.

Coumadin (warfarin), and Lovenox are blood thinners. Coumadin is given in pill form and the patients have to have their levels checked each month to adjust the dosage. We call it a PT (ProTime) and when you see someone is on Coumadin (warfarin) , you ask them when is the last time they had their blood drawn for their levels. Some patients actually call it a protime test. depends on their level of education with their condition . Lovenox is injected. It is actually what we can think of as "heparin-lite". It is very efficient but requires the pt or one of their family members to be willing to do an injection. They recommended site of injection is in their abdomen (hence LOVEnox, LOVE handles... get it?)

Thrombolytics (fibrinolytics) Thrombo (clot) – Lytics (loosen) are the clot busters that we heard about quite a bit 20 years ago. Now we have enough emergent cardiac cath labs around here that we aren't giving as much as we used to. Retavase,

TPA, Streptokinase, TNKase, activase are all examples. This stuff is not to be taken lightly. We have a whole check list we review with the patient and we still review it with Medical Control before we actually give it. These meds actually get in there and break apart or “lyse” all of the little proteins that hold a clot together. Think of this stuff karate chopping its way through fibrin in a clot. Hi-Ya! Because it actually breaks up fibrin proteins in blood clots, it breaks up blood clots in other places too. Our bodies are constantly making tiny clots in various areas for different reasons. It is all good as long as the clots don't get bigger and they will dissolve in the recommended amount of time. The big side effect of these medications is that we will dissolve all of the other clots that our body has made AND we won't be able to make any clots for a while either. And what about when a big clot IS dissolved..... there is a big chance of a small chunk of it breaking off and traveling to your lungs or kidneys before it has a chance to dissolve completely. Then you have a whole other set of problems. There is also something called "Reperfusion Arrhythmias". This is when the clot that is causing the problem in the heart actually dissolves and blood flow is restored to the damaged part of the heart. It is great to know that the medication worked but it can give you a real paramedic pucker factor when you see these arrhythmias on the monitor.