

Blood Resolutions

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At the beginning of each year we make many New Year's resolutions. These annual resolutions are never not met and we repeat the same resolutions yearly which would include: exercise, lose weight, eat healthier, spend more time with the family, etc. The following year we make the same resolution without even changing the "lip service". The problem is failure to commit, focus (too many resolutions) and strategies to achieve them with specific targets.

A few years ago I began to make resolutions regarding complications after surgery. I wanted to decrease my transfusion rates, superficial and deep infections, total hip replacement dislocations, thrombophlebitis (dvt), etc. I chose one resolution annually with a specific strategy (how to achieve) and a defined end point. There was a long term end point as well so I could re-evaluate the strategy annually, modify, and lower the target as deemed necessary.

One year I picked transfusions. Strategy began immediately with the history taking once surgery was planned and scheduled. My book time to surgery was a least one month allowing plenty of time for the pre op strategy. I took a keen history regarding any etiology the patient might have for low hemoglobin presently or post-operative. This would include would a cancer history, auto immune disease, etc.as well as their concomitant drug therapy. This also included a specific history of peptic ulcer disease(pud) inquiring if the patient presently had the disease or a past history of it with resolution One year I learned my most common cause blood loss was postoperative G.I. bleeding that either I did not inquire or the patient neglected to inform me. Patients were no longer under treatment often consider themselves cured and did not appreciate that surgery could exacerbate the disease. Blood dyscrasias, family histories of bleeding, past transfusions and medications that might suppress blood production to include over the counter medications which patients always forget to mention were elicited.

I purchase a hemoglobin analyzer so that I could check the hemoglobin immediately in the office. A pre op target of hemoglobin of 13 was set- allowing at least 1-3 units of blood loss before transfusion. If no etiology was identified by history for a low hemoglobin such as 10 the patient was referred to their primary care for evaluation and possible treatment. If the hemoglobin was between 10-13 an iron binding capacity was obtained and a decision made to place the patient on iron tablets. If no etiology for low hemoglobin was determined the patient was placed on some type of erythropoietin. The patient was see weekly with a hemoglobin test and an another injection (x3) until the desired hemoglobin was achieved.

Many orthopedic surgeons were doing auto transfusions but this was expensive, caused the patient to arrive at the operating room with a low hemoglobin and the donated blood was frequently not given. Since the blood was available at some hassle and expense a sub-conscious tendency exists to transfuse the blood nor did some patients like donating blood and not receiving it. This practice was stopped.

At surgery regional anesthesia was preferred to general anesthesia. If the patient had a prior history of PUD the appropriate medications were given IV and oral medications postoperatively. Transexamic acid (txa) was administered I.V. although it could be given topically as well as other topical agents to prevent blood loss at the wound. If bleeding was occurring superficially during closure constricting agents were injected locally into the subcutaneous tissue.

Postoperatively emphasis placed on ice to include ice machines and limb elevation in the recovery room as well as the orthopedic unit. If the patient did not have risks for DVT the patient was dispensed aspirin (importance of a history of PUD) instead of one of the more aggressive anti-coagulating medications. Post-operative triggers for giving transfusions were lowered from a more traditional 30 to 20 unless there were uncontrolled hypotensive episodes or significant medical diseases. Automatic trigger orders for transfusions were stopped and all transfusions required a verbal order even in the middle of the night.

My transfusion rate was eventually reduced from 30% of surgeries annually to 2-4% which included 200 total joints annually to as well as a small numbers of revision replacements. A focused approach, appropriate strategies and reasonable targets allow achievable reduction of many post-operative complications.

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