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INFORMATION ABOUT BLOOD CONSERVATION, DONATION AND TRANSFUSION

With any major surgery such as joint replacement, there can be significant loss of blood. While blood can be replaced by transfusion, because of the associated risks we use many methods and strategies to minimize the loss of blood and the need for blood transfusion. These include special methods of anesthesia, special surgical technical measures and various types of devices and blood recovery systems.

Blood must be considered a "drug" when transfused, and like any other drug, there are benefits and risks. Common risks with a blood transfusion are allergy, infection, an adverse reaction to the blood and rarely, the transmission of a disease to the recipient.

When blood is needed for a patient, it commonly comes from a blood bank that distributes blood donated by volunteers. The blood is screened for all diseases and contaminants that we know how to test for, including hepatitis, HIV and other harmful pathogens. Once screened, it can be given to you if a proper match is obtained. Another option for obtaining blood is to pre-donate your own blood before the surgery. This is known as pre-operative autologous donation (PAD). This option is attractive because a patient can usually donate one, two or more units of their own blood before the procedure for use if needed during or after surgery. However, one must have a satisfactory hemoglobin value in order to pre-donate. Hemoglobin is the substance that carries oxygen in the body and too low a level is called "anemia".

Most patients would prefer to avoid blood transfusion if possible to avoid the risks. Other patients like someone who is a Jehovah's Witness, must avoid blood transfusion for religious conviction. We have developed strategies that have been shown to provide safe and satisfactory outcomes without use of blood.

The choice of whether or not to pre-donate your own blood must always rest with you, the patient. However, certain guidelines exist regarding who should and who should not pre-donate. Most of these guidelines relate to the patient's baseline hemoglobin value. If the hemoglobin level is above 15 grams, it is unlikely that blood transfusion would be necessary during a routine uncomplicated joint replacement. In that case, while not absolutely necessary, pre-donation could be chosen by the patient if so desired. The patient must always remember if it is decided not to pre-donate, then bank blood may have to be given if necessary. Patients with hemoglobin between 13 and 15 grams can pre-donate, but in most cases, a transfusion would not be needed. The blood is most often transfused back to you in the hospital.

If the patient hemoglobin level is between 10 and 13 grams, pre-donation is not recommended because it will lower the hemoglobin to a level which almost certainly will cause the patient to require transfusion. In those cases, the use of a drug called erythropoietin (EPO, Pro-crit, etc.) may be prescribed to help boost the level. Your medical doctor will give you one injection per week for 3 weeks, starting the fourth week before surgery is planned. This generally will increase the blood level of hemoglobin significantly. The use of this drug is effective, but is expensive and not covered by all insurance plans. If the drug cannot be given, then the surgery in most cases could be done, but transfusion with bank blood may be needed.

If the hemoglobin is less than 10 grams, the patient should return to the primary care doctor for diagnostic tests to determine why the level is that low. Many patients with certain arthritic or metabolic conditions are chronically anemic and no further workup need be done. In those cases, again EPO and other therapies may be recommended and transfusion may be needed.

In summary, we like to try to avoid blood transfusion if possible. For patients who will not accept transfusion under any circumstance we use several strategies as outlined above in order to minimize the risk of surgery under those conditions. For those who will accept blood and wish to pre-donate their own blood, they can do so under the guidelines set forth above. If you have any questions regarding this policy, please do not hesitate to call.

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