Artificial Blood

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BME 281 First Presentation, November 26, 2012 <trevor_bernier@my.uri.edu>

Abstract— This paper outlines the current state of technology with regards to artificial blood to replace transfusion. There are multiple different designs and several methods used to create an alternative to transfusion. This paper will focus on current blood substitution technologies.

I. INTRODUCTION

This new innovation is very promising in the field of blood. With and artificial substance that can take the place of blood, there can be a large reduction in the diseases and other issues with current blood transfusions. With the ability to manufacture a replacement for blood, there would be much less of a shortage, assuring that all who need blood for surgeries, wounds or other reasons will get it.

II. USES

Clinical trials are available in the U.S., Europe, and South Africa. This artificial blood is used to mirror the functions of biological blood as closely as possible, making sure that the body will accept it as if it were natural. The main function of the blood substitution is to carry and transport oxygen throughout the body. This is one of the most important parts of the blood in the body and it is something that is necessary at all times to maintain life. This method is a better alternate to blood transfusion. It is because it is eliminating the human to human transfer of blood. This is important because many things can go wrong with the current transfusion methods.

III. ADVANTAGES AND DISADVANTAGES

The advantages to using the artificial blood seem to outweigh the disadvantages. One advantage is that being able to manufacture large quantities of blood will end the shortage. Many donors give blood every year, but this blood is not always safe and the rate of people who need it, to the donors is rising. Another advantage is that there is less of a chance of spreading diseases because the blood is made in a secure place and scientists know full history of where it has been. Artificial blood lasts longer in storage than regular blood, which can be very useful. The military could benefit greatly from artificial blood. Some disadvantages are that it is currently expensive, but the price to make it is expected to drop to less than the cost of transfusion. Lastly, it may increase chances of a heart attack.

IV. FUTURE

Hopefully this promising new technology can continue to grow and help people who are in need of it. In the future they hope to use stem cells to produce blood. Also add functions to the artificial blood such as things that will replace white blood cells, platelets, and blood proteins. Finally bringing down the cost to be less than blood transfusions would be a huge step.

REFERENCES