

Alan Pierce

pierceaj@optonline.net

PolyHeme: The New Universal Blood Substitute

Any injury that causes rapid loss of blood is life threatening. Critical trauma victims, without proper medical attention, soon go into hemorrhagic shock as their blood pressure falls below critical levels and their internal organs, starved for oxygen, begin to fail. A car crash, military operation or other destructive force that opens veins or arteries will soon end a person's life if medical attention isn't received quickly.

That said, human blood is not usually given at an accident site. To stabilize critically injured people, an ambulance's EMT (emergency medical technician) crew or paramedics infuse them with a saline (salt water) solution to stabilize them be-

fore they are transported to a hospital. This infusion can't restore the remaining blood's ability to carry oxygen. It is a stopgap method used to keep lost blood volume up so a person's blood pressure doesn't fall to critical levels. At the hospital the victim is quickly cross-matched for blood type so real blood transfusions can begin.

If Northfield Laboratories Inc. stage III trials of PolyHeme succeed, the trauma procedures described above will soon change. Northfield's study will determine if this artificial oxygen-carrying blood substitute, which is compatible with all blood types, is ready for widespread use in everyday trauma and surgical settings. In this study, the blood substitute, which is made from real blood, will be given to patients at accident sites before transporting them to a hospital. The study also calls for the continued use of PolyHeme with these patients during their first 12 hours of hospital treatment.

The research that led to the development of this artificial blood was originally funded by the United States Army which needed a blood substitute that could be used under battlefield conditions. The founders of Northfield started their research in 1969 as an academic research project. They formed Northfield Laboratories in 1985 and spent the next 20 years perfecting their proprietary process until their artificial blood is finally ready for use in everyday trauma and surgical set-

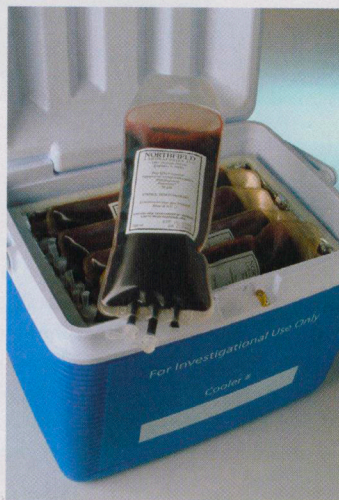
tings where real blood isn't available.

PolyHeme has already been tested on critically injured patients in situations where the patients would have died before real blood transfusions could have begun. In some of these cases, blood loss was so extreme that the critically injured received over 20 units of the artificial blood, which meant that their own blood supply was completely replaced with PolyHeme. The documented results of these

clinical trials were so positive that PolyHeme was judged ready for stage III trials.

To produce PolyHeme, Northfield separates, purifies and filters hemoglobin from out-of-date blood that would normally be discarded. They use a chemical process to modify this hemoglobin into a polymerized form. By

chemically joining smaller hemoglobin units into larger hemoglobin polymer proteins, they produce modified hemoglobin that can perform all the functions of real blood without undesirable side effects. You can learn more by typing PolyHeme into your favorite search engine or going to www.northfieldlabs.com/background.html.



Northfield Laboratories Inc.

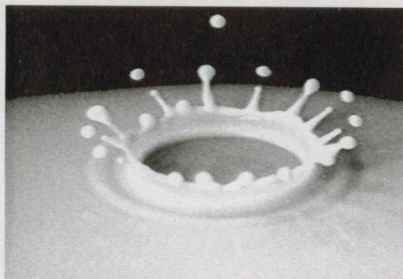
Blood alternative, PolyHeme

Recalling the Facts

1. Why can't an EMT crew start a transfusion of real blood at the scene of the accident?
2. Why do they start a saline infusion if a person has lost a lot of blood?
3. If PolyHeme is approved, where will it be used? ☺

Alan Pierce, Ed.D., CSIT, is a technology education consultant, technical writer, and public speaker on technology issues.

Physics: CINEMA CLASSICS on DVD



Popular collection of over 240 physics videos and lessons.

Visit www.ztek.com for samples.

PHYSICS Views®

Ztek® Co.

www.ztek.com

cs@ztek.com

P. O. Box 967 • Lexington, KY • 40588-0967
800/247-1603 • 859/281-1611 • fax:859/281-1521