MEDICINE

Donors Save Wounded

Serum albumin and blood plasma restore life chance to thousands of fighting men. Some require as many as 22 transfusions.

➤ SEVERAL THOUSAND cases are already on record in which emergency transfusions of dried blood plasma and serum albumin have given a new lease on life to American wounded. Through a miracle of modern science, blood donated by American men and women is saving today the lives of soldiers and sailors in North Africa, the South Pacific and wherever our men fight.

Men like Bill Sullivan, severely battered during the battle of the Coral Sea, who received eight transfusions. Or Torpedoman Sam Kurtz, who lost both legs when his ship was torpedoed in the North Atlantic, and was saved by twelve transfusions of plasma. Or Albert James Heick, who was so severely burned during the attack on Pearl Harbor that it took twenty-two transfusions to pull him through.

According to the Surgeons General of the Army and Navy, "the use of plasma is beyond question one of the greatest medical advances in the past century." For unlike the whole blood transfusions attempted during the last war, plasma need not be matched with the blood type of the wounded fighter.

Reduced to a dry, straw-colored powder, it may be transported and stored without refrigeration, and used under the most adverse combat conditions simply by mixing it with distilled water.

Need Very Great

Importance of plasma in treating shock and burns is further indicated by the tremendous amounts of blood requested by the Army and Navy from the Red Cross. No one can say how much will be required before the war is over. But more than a million and a quarter pints already have been delivered and present Red Cross quotas call for a minimum of 50,000 additional pints a week throughout the present year. It is possible that even more will be required.

Although simply explained, the method by which blood is processed into dried plasma is extremely complicated, requiring special equipment and the utmost technical skill.

Each day, the blood collected by the Red Cross is shipped to biological laboratories designated by the Army and Navy. There it is centrifuged to separate the plasma from the blood cells, pooled, frozen, and dehydrated. The bottles of dried plasma are sealed in vacuum, after which they are hermetically sealed in tin cans with the tubes and needles necessary for a transfusion. With the plasma goes a bottle of distilled water. From this unit the plasma can be prepared for transfusion within three to five minutes.

Although the use of plasma is still relatively new, even newer blood substitutes are being developed. Outstanding among these is human serum albumin, which is also being processed for the Army and Navy.

More Concentrated

The use of serum albumin as a blood substitute is a development for which Dr. Edwin J. Cohn, professor of physical chemistry at Harvard Medical School, is largely responsible. Generally speaking, it is used in the same type cases as plasma, and in nontechnical terms may be described as a more highly concentrated type of plasma. For example, one unit of serum albumin is roughly the equivalent of two units of dried plasma as a blood substitute. However, it requires approximately 3½ pints of blood to obtain one unit of serum albumin, compared with one pint of blood for one unit of plasma.

Serum albumin is expected to supplement rather than replace dried plasma, each product having certain qualities not possessed by the other. Perhaps the principal advantage of albumin over plasma, at least from the utilitarian standpoint, is that the package requires less space—a feature in which the Navy is particularly interested. For instance, a kit containing three units of serum albumin is somewhat smaller and weighs about a pound less than a kit containing only one unit of plasma.

Details of the method by which blood is processed into serum albumin are at present regarded as a military secret. However, it may be pointed out that albumin is a protein extracted from human blood and that some of the processing is carried on at temperatures below 32 degrees Fahrenheit.

One unit of serum albumin is composed of slightly less than nine-tenths ounce of albumin dissolved in one-fifth pint of physiological salt solution. Like plasma, it requires neither typing nor refrigeration and can be kept at temperatures ranging from slightly above freezing to approximately 120 degrees Fahrenheit. But unlike plasma, serum albumin is in solution and nothing has to be added to it before the transfusion is given. It is put up in glass vials with rubber stoppers at both ends, into which tubes are inserted and the transfusion given by injection into the veins.

The blood donor project through which the Red Cross is collecting the blood for the armed forces, ranks as the largest single controlled medical undertaking of all time. The blood is collected through fixed centers operated by Red Cross chapters in key cities near the processing laboratories, and through mobile units which visit surrounding communities within a radius of sixty miles.

Donating a pint of blood is painless and has no harmful after-effects, the body replacing the blood within a few days. Donations may be given at Red Cross Blood Donor Centers by anyone in good health between 18 and 60.

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PUBLIC HEALTH

Number of War Blinded Will Not Be Very Great

➤ THE SPECTACLE of tens of thousands of helpless, blinded veterans of this World War is unfounded, in the opinion of medical scientists. Not more than a couple of hundred, it is understood, have been blinded so far in all the extensive fighting by soldiers of Great Britain and the colonies. Less than 250 of our own soldiers were blinded in World War I.

The *Journal of the American Medical Association* (April 10) says that public fund-raising campaigns for the war-blinded will not be necessary because Congress has already taken all steps necessary to make sure that blinded veterans of this war will have prompt and adequate medical treatment, and physical, mental and social rehabilitation.

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