MEDICINE

Life Saving Drugs

Many lives of soldiers may be preserved by new anti-blood clotting drugs in case of wounds, heart disease or frostbite. One to be taken by mouth foreseen.

➤ ANTI-BLOOD clotting drugs may save the lives of many of our fighting men threatened by fatal blood clots after wounds or in case of heart disease, Dr. Irving S. Wright of Cornell University Medical College declared at the meeting of the Association of Military Surgeons in New York.

In the future, soldiers may also be protected against loss of a foot or other part through frostbite. This will depend on development of an anti-clot drug which can be taken by mouth and will produce its effect within an hour. Such a drug is "not at all unlikely in the light of recent developments," Dr. Wright declared.

Drugs now used to treat conditions in which blood clots threaten to or actually do obstruct blood vessels are heparin, dicumarol and Tromexan. Other new ones, now under study, are BL-5, phenylindanedione and Paritol.

Accidental injuries in combat training programs as well as war wounds and operations are likely to increase the occurrence of thrombophlebitis, the blood-clot-in-the-veins condition, Dr. Wright pointed out.

The soldier who is not treated with suitable anti-blood clot drug when he develops this condition in the saphenous veins in the leg has a 30% to 50% chance of suffering a clot on the lungs, Dr. Wright reported. After this, he has a 20% chance of having a fatal clot.

With correct anti-clotting treatment, the risk of the first clot on the lungs is reduced to five percent and the risk of death five-tenths percent.

Among the most common operations required by war, Dr. Wright pointed out, is the repair of connections between an artery and a vein brought on by a penetrating wound. The variety of these is infinite as to type and location and often taxes the ingenuity of the most skillful surgeon. To get best results in such cases, a team trained in the use of the anti-clotting drugs should follow the patient through his operation and after.

Men in military service are also liable to heart disease, Dr. Wright stated. Thousands developed rheumatic heart disease in World War II. Many of these have or will develop the serious condition called auricular fibrillation and some will develop clots.

The use of anti-clotting drugs, notably long-time treatment with dicumarol, will prevent, in almost every case of fibrillation, the formation of clots within the heart and their release as emboli that are carried on to obstruct blood vessels elsewhere in the body.

This, Dr. Wright declared, is the only form of treatment which will attack this problem with any degree of success.

As proof he cited a series of more than 100 patients treated with dicumarol while up and about for from one to five years, a total of over 400 patient years. "Notable success without a single death from hemorrhage" has been obtained with this group. This type of treatment, however, must be carried out only when it is carefully controlled, he warned.

More than 800 soldiers under 40 years old died of the serious heart condition called coronary thrombosis with myocardial infarction during World War II, Dr. Wright reported. The total of all ages who developed this condition would run into many thousands.

The death rate from this condition can be reduced one-third by the use of anti-clotting drugs.

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PHYSICS

Everything Is Going Up; Even Speed of Light

➤ BETTER AIMING of ship's guns by radar is expected to result from the use of a new value for the speed of light announced in Stanford, Calif.

The new value, 299,789.3 kilometers per second, (approximately 186,280 miles per second) is about 13 kilometers per second faster than the generally accepted figure. Stanford claims a possible error, plus or minus, of only four-tenths of a kilometer per second. This claimed error is much smaller than the differences in the various values for the speed of light found by other investigators.

The recently announced value is spurring scientists to further experiments to set this fundamental unit with a margin of error that leaves no room for doubt within practical limits as to the correct figure.

Many measurements of the velocity of light using visible light have been made, each investigator generally claiming a high degree of accuracy. The differences between the results obtained, however, far exceed the limits of accuracy set by the experimenters. Reconciliation of these various determinations is a matter of great concern to physicists.

Radar uses the time taken by radio waves to travel to an object and back to determine its distance. Radio waves differ from light waves only in their wave length and it is assumed that both travel at the same speed.

Recently scientists have measured radio waves, instead of light waves, to find the velocity of light. Dr. Kees Bol and William J. Barclay, under the supervision of Dr. Edward Ginzton, all of Stanford University here, did the major part of the research work leading to the announcement.

Their results are in very close agreement with the recently reported value of 299,792.5 kilometers per second announced by Drs. L. Essen and A. C. Gordon-Smith of Britain's National Physical Laboratory. Possible error in this figure is, they claim, plus or minus three kilometers per second.

Both the British and American scientists obtained their values by measuring the resonant frequency of a short, cylindrical tube. A radio wave sent down this tube is reflected back and forth between the two ends. When the time of travel between the ends equals the time interval between the following waves, an electrical resonance is built up. This can be detected with very high precision.

Resonant frequency for sound can be demonstrated by holding a vibrating tuning fork over a tube of such a length that its natural pitch is the same as that of the tuning fork. This is analagous in principle to the system used for determining the new speed of light.

Science News Letter, November 18, 1950

MEDICINE

Coffee Doesn't Shorten Lifespan—in Rats

➤ IF MEN and women react like white rats, they can drink all the coffee they want without shortening their lives any. The women, in fact, might even gain a little longer life.

This is suggested by experiments reported

MEASURES LIGHT SPEED—Dr. Edward Ginzton is showing the cylinder used in Stanford University experiments to obtain a more accurate measurement of the speed of light.