

CARDIOVASCULAR DISEASE

Identifying lipoproteins

Lipoproteins play a critical role in transporting fat and cholesterol through the body, an activity that is closely connected with cardiovascular problems. Pinpointing the presence and amount of various kinds of lipoproteins in heart patients could lead to a better understanding of heart and circulatory diseases (SN: 7/12, p. 33).

Dr. Robert S. Lees of the Massachusetts Institute of Technology found the blood level of low density beta-lipoproteins to be higher in subjects susceptible to heart attacks than in normal subjects. Such was not the case with blood-cholesterol levels, Dr. Lees told the American Heart Association meeting in Dallas.

The protein part of lipoproteins (fat and protein combinations) ferries fats through the circulation, and the beta-lipoproteins carry most of the cholesterol, which many believe is closely associated with coronary artery disease.

Two commonly occurring types of elevated lipoprotein disease together accounted for more than half of the coronary heart disease cases in a study conducted at Boston Hospital, Dr. Lees said. However, with the one type, although high levels of both cholesterol and protein were found, with the second type, high levels of protein were accompanied by normal levels of cholesterol.

ARTIFICIAL ORGANS

Reducing clot problems

Blood clotting problems have been plaguing the use of artificial hearts and valves, but coating these devices with a protein gel may be the answer to the problem, say researchers at the University of California at Los Angeles Medical School.

Clotting probably occurs as a result of blood molecules that characteristically form a polarized layer one molecule thick when they meet a foreign substance—in this case, the device. Gel prevents this monomolecular layer from forming, thus preventing clotting, says Dr. James V. Maloney Jr., head of the UCLA team.

A defect in gel used by the researchers is that it develops microscopic fractures when coating synthetic materials used in grafts and heart pump-assist circuits. The UCLA team is searching for other protein-gel compounds free of this feature.

TRAUMATOLOGY

Taping helps skin

Although taping of wounds has been used for centuries, a new development with this method may make the more popular suturing method outmoded.

The new taping technique makes the new skin stronger, according to Drs. James C. Forrester and Thomas K. Hunt of the University of California San Francisco Medical Center.

The two physicians tested 1,120 standard skin specimens of rats under constant tension and found that taping increases the tensile strength of the skin.

The physicians explain that in a wounded area the skin fibers are dispersed and that tension perhaps causes these fibers to align more readily.

In the experiment, the skin wounds in some animals were closed with surgical tape that left the underlying muscle retracting, placing tension on the wound area. Some wounds were sutured and left alone.

The skin under tension recovered 90 percent of the tensile strength of unwounded skin in 150 days. Sutured wounds recovered 70 percent of the normal tensile strength, they report in the Nov. 3 *JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*.

VIRUS INFECTIONS

Anticold drug

An effective treatment to cure, mollify or even ward off the common cold continues to defy scientists. Even immunization is presenting problems because any of 100 viruses could cause cold symptoms, and a vaccine might have to contain as many as 20 or 30 antigens to be effective.

Scientists at the Upjohn Co. in Kalamazoo, Mich., have come up with a new approach to the riddle: a drug, calcium elenolate, which is obtained from extracts of olive plants. The drug inactivates a broad spectrum of viruses, including the common cold. Dr. Harold E. Renis told a Conference on Antimicrobial Agents and Chemotherapy in Washington, D.C., that the drug probably interacts with the outer protein coat of viruses.

This antiviral effect, he says, can reduce both the severity of the infectious process and minimize the spread of the infection to the environment.

In hamsters inoculated with a virus called para-influenza type 3, calcium elenolate reduced the number of infectious particles in the nose and, moreover, stopped the infection from spreading to the animals' lungs. Additional doses 8 to 16 hours after inoculation reduced the number of virus particles in the hamsters even further, Dr. Renis reports.

Side effects to the drug were noticed in hamsters, but these were minimal, according to Dr. Renis. And although effective doses have not yet been tried in humans, a small dose—1 percent concentrations four times a day for 14 days—was well tolerated by humans, he reports.

DIAGNOSIS

Identifying lung disorders

Distinguishing between bronchial disease and emphysema is difficult but important. Bronchial disease, when diagnosed, can be treated effectively with antibiotics, whereas emphysema cannot.

Lung-imaging tests show that inhaled radioactive aerosols produce different patterns for the two types of obstructive respiratory disease, according to Drs. Toyoharu Isawa, Karlman Wasserman and George V. Taplin of the Laboratory of Nuclear Medicine and Radiation Biology of the University of California at Los Angeles.

Lung scanning reveals that radioactivity is deposited in the lung periphery in bronchitic disorders, but that in emphysema, the radioactivity is seen mainly in the central regions of the lung.