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Dr. Wilkins. Dr. Sprague, ladies, and gentlemen, since 1910, a number of new drugs have come into use for the treatment of high blood pressure and, considered together, they represent one of the great advances in the medical field during the period of our report. These drugs have changed not only our treatment of hypertension, but also our understanding of the nature of this disease. Except in a few cases, the cause of high blood pressure is unknown. None of the new drugs, upon their introduction, was designed to get at the cause. Rather, they were designed primarily to relieve the results, namely, the elevation of the blood pressure. The therapeutic value of each drug should be gauged in terms of its effect on the hypertension and has brought us closer to a true concept of the cause of this condition.

There are five main categories of drugs now in use for high blood pressure. These are (1) reserpine or Indian snake root, and its derivatives; for example, deserpin; (2) hydralazine or apresoline; (3) veratrum viride and its derivatives; (4) the peripheral vascular blocking drugs, such as hydralazine and methyldopa; (5) (and probably most important) chlorothiazide and similar diuretics which stimulate the kidney to pass out salt.

Each of these agents acts to lower blood pressure, but each acts in a different way. Reserpine, for example, quells the effects of the sympathetic nervous system on the brain and lessens nervous tension. Hydralazine dilates the blood vessels directly, especially in the kidney area. Veratrum viride also dilates blood vessels but reflexly through the autonomic nervous system. The nerve-blocking drugs, on the other hand, prevent reflex control of blood vessels by blocking excessive nervous reactions. Chlorothiazide and the other diuretic drugs seem to change the blood content or its distribution of sodium chloride and other salts, lessening the blood vessels' constrictive reactivity and the resultant elevation of blood pressure.

Thus, the doctor today has in his bag new chemical tools for lowering blood pressure, and he has a variety of them. One of the most interesting findings has been that these chemical tools are more effective when used together than when given singly, even in increasing large doses. This is an old trick in treatment, familiar to everyone in the use of ice for headache, but it is proved that a combination of blood pressure drugs by blocking excessive nervous reactions. Chlorothiazide and the other diuretics seem to change the blood content or its distribution of sodium chloride and other salts, lessening the blood vessels' constrictive reactivity and the resultant elevation of blood pressure.

Dr. DeBakey. Dr. Sprague, ladies, and gentlemen, few areas in medicine have exhibited such explosive growth as the field of cardiovascular surgery during the past decade. Indeed, the advances we have experienced in the last few years in this field of surgery have surpassed all previous efforts in this field of surgery. Among the most striking features of these advances have been the most important factors underlying their achievement. These have been the increasing intensity of research endeavors and the bold ingenuity and determination of our surgeons in the face of surgical attack on these grave diseases. As a consequence, many conditions which only a few years ago were considered impossible to treat are now amenable to effective therapy. No less important has been the fact that these surgical developments have contributed significantly to greater knowledge and better understanding of the underlying fundamental factors involved in the pathologic, physiologic, and biochemical disturbances of cardiovascular diseases.

An increase has been stimulated by the progress which has been made in recent years in the surgical treatment of acquired diseases of the aorta—the main artery of the heart—by the introduction of many aneurysms and occlusive lesions. An aneurysm is a ballooning out and thinning of the wall of an artery. Aneurysms of the aorta, for example, have challenged physicians for centuries; and although various methods of treatment were devised and attempted, none were effective. Within the past decade, however, curative therapy has been accomplished by the development of the surgical principles of extirpation of the lesion with restoration of normal circulation. The most successful application of this method of treatment and development of these principles is dependent upon a number of factors, among the most important of which are the nature of blood vessel structure and arterial graft replacement.

The development and refinement of these principles is of great practical and clinical fruition in the research laboratory. More recently, and as a result of these investigations, the problem of the treatment of aneurysms has been effectively solved through the development of substitute arteries made of such materials as Dacron, and allografts; and these are now as readily available in the operating room as suture material.

Surgery to replace diseased arteries has become a reality. Deadly lesions which were formerly considered hopeless are now amenable to curative treatment. Equally striking has been the progress made in the treatment of arteriosclerotic occlusive disease, the gravity of which has long been recognized. In arteriosclerotic occlusive disease, the walls of the artery gradually narrow and ultimately blocks the opening in the artery.

Our prediction is that, if we continue to develop and employ the advice which is provided by this group of physicians, we may be in a position to control many of these conditions as they affect the future of the heart. The currently agreed-upon treatment is not only helping people to live longer but is enabling them to live better lives.