Abstracts

AB-333-72

HEYDEN S, HAMES CG, BARTEL A, CASSEL JC, TYROLER HA, CORNONI JC: Weight and Weight History in Relation to Cerebrovascular and Ischemic Heart Disease. Arch Int Med 128:956-960 (Dec) 1971

The main findings from this study, as well as several others, tend to favor the concept of a definite risk factor of overweight and excessive weight gain after age 20 for the development of cerebrovascular disease. However, overweight and excessive weight gain after age 20 seem to be of no major importance in the etiology of myocardial infarction.

AB-334-72

HAYES CG, TYROLER HA, CASSEL JC: Family Aggregation of Blood Pressure in Evans County, Georgia. Arch Int Med 128:965-975 (Dec) 1971

The major findings of family aggregation of blood pressure in the Evans County Prevalence Survey are that (1) similarities for first-degree genetic relatives, as measured by correlation coefficients are of the same order of magnitude in blacks and whites and of the same order of magnitude as reported in other populations; (2) categorical, mating-type analysis applied to the data indicates the dependence of offspring prevalence of both systolic and diastolic high blood pressure upon parental type, and this is greater in the white than the black; (3) evidence from both categorical and correlational analyses indicates spouse similarity in the white pairs, not in the black pairs; and (4) for white spouse pairs aggregation is a function of wife's age and is maximal at approximately the age of 50 years.

AB-335-72

BREDDIN K, SCHARRER I, SCHEPPING M: Die Hemmung der Plättchenaggregation mit Azetylsaliyäsäure. (Inhibition of Platelet Aggregation with Acetylsalicylic Acid.) Munchen Med Wochr 113:1284-1292 (Dec 1) 1971

In patients with vascular diseases platelet aggregation frequently is increased. This trend to aggregate can be inhibited by administration of acetylsalicylic acid (ASA). Our experimental findings made it appear probable that acetylsalicylic acid has an aggregation inhibiting effect in vivo through acetylation of a plasma protein.

In the "Center of Internal Medicine" in Frankfurt/Main approximately 1500 patients got ASA from 1966 to 1970, for the treatment or prevention of thromboembolic diseases. At present indications for administration of ASA are: acute thrombophlebitis, phlebothromboses (if anticoagulants are contraindicated), preoperative and postoperative prophylaxis of thrombosis and prophylaxis of coronary infarction. Most of all prophylaxis of thrombosis seems possible with ASA.

AB-336-72


A brief description of polymyalgia arteritica is given. A case summary is included to demonstrate the less commonly appreciated manifestations of the illness, i.e., peripheral arterial occlusions. Angiography may play an important role in diagnosing those cases involving manifestations of arteritis.

AB-337-72


A simple technique to improve the success rate in catheterization of tortuous carotid arteries is presented. It involves external compression of the guide wire within the common carotid artery to prevent the guide wire and catheter from recoiling when the catheter is advanced.

AB-338-72


Fifty-two cases of fibromuscular dysplasia involving the cephalic arterial system are analyzed. This study revealed that the cervical portion of any cephalic vessel may be involved. Multiple vessels often show changes, but the internal carotid artery was most frequently

*Authors' abstract.

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affected. The "typical string of beads" deformity located in a segment of a cephalic vessel adjacent to the second cervical vertebra is pathognomonic of the condition. In this series, the pathologic examination revealed fibromuscular dysplasia of the medial fibroplasia type with microaneurysms.

AB-339-72

Fluorescein arrival in each ocular fundus subsequent to intravenous injection was plotted simultaneously in humans by a fluorophotometric method. In 17 normal subjects arrival time was equal in the two eyes; the resultant dye dilution curves were symmetric in shape when simultaneous curves of right and left eyes were compared. In eight patients with proved unilateral carotid artery occlusion and ten others with probable unilateral carotid artery or ocular circulatory disease, there was either delay in arrival of dye to the affected eye or asymmetry of the resultant dye dilution curves. Potential diagnostic and investigative uses of this apparatus in the study of circulation are suggested.

AB-340-72
YAMAGUCHI T, WALTZ AG: Effects of Subarachnoid Hemorrhage from Puncture of the Middle Cerebral Artery on Blood Flow and Vasculature of the Cerebral Cortex In the Cat. J Neurosurg 35:664-671 (Dec) 1971*

Bilateral measurements of regional cortical blood flow (CBF) and the diameter of superficial cortical arteries were made before and after puncture of the right middle cerebral artery (MCA) of 11 cats with bilateral craniectomies. The CBF was decreased in the right cerebral hemispheres before puncture, probably because of manipulation and exposure of the MCA. Decreases of CBF occurred after MCA puncture in the contralateral cerebral hemispheres of five of seven animals without subarachnoid blood over the convexities of the hemispheres. The mean CBF value for the contralateral hemispheres was significantly lower after puncture than before. There was no consistent relationship between CBF and the calibers of surface cortical arteries. Thus, basal subarachnoid bleeding can cause decreases of CBF of the cerebral hemispheres, probably because of basal arterial spasm associated, at times, with vasomotor paralysis and failure of autoregulatory responses. If combined with increases of intracranial pressure, such decreases of CBF may be adequate to produce cerebral ischemia.

AB-341-72
ECHLIN F: Experimental Vasospasm, Acute and Chronic, Due to Blood in the Subarachnoid Space. J Neurosurg 35:646-656 (Dec) 1971*

This investigation on monkeys provides arteriographic and other evidence that blood, in the absence of evident mechanical stimulation or injury to intradural arteries, will, when injected into the anterior cerebral subarachnoid space through a catheter, consistently cause acute and chronic vasospasm of the intradural arteries, presumably where they are contacted by blood. Evidence indicates that vasoconstrictor agents or factors in fresh blood cause the vasospasm, since similar subarachnoid injection of saline or clear serum did not cause vasoconstriction. Other circumstances involving mechanical or other factors, such as vessel injury, may contribute to the length and severity of the vasospasm, but whether they have an etiological role needs further study.

AB-342-72
SPITTLE CR: Atherosclerosis and Vitamin C. Lancet 2:1280-1281 (Dec 11) 1971*

Following the chance observation that the author's serum-cholesterol could be varied between 140 and 230 mg per 100 ml by increasing the vitamin-C intake or by lowering it, a study was undertaken in healthy individuals and in patients with atherosclerosis. In healthy people under the age of 25, cholesterol levels tended to fall when 1 g of vitamin C per day was added to an otherwise normal diet. In older people, no consistent pattern of serum-cholesterol change was seen, but in patients with a history of atherosclerosis, most of whom were on clofibrate and/or anticoagulants, the serum-cholesterol increased in the weeks when vitamin-C supplements were given. It is suggested that this rise in serum-cholesterol is caused by mobilization of the arterial cholesterol.

AB-343-72

The relationship between tissue steroid measurements and clinical findings was examined in six individuals with cerebrotendinous xanthomatosis. Tendon xanthomas (six of six patients), neurological dysfunction (four of six), pulmonary insufficiency (four of six), premature atherosclerosis (three of six), cataracts (two of six), and endocrine hypofunction (one of six) were
encountered with decreasing frequency. Plasma cholestanol concentrations were elevated and were associated with low plasma cholesterol levels. Fifteen tissues obtained at postmortem contained 10 to 400 times more cholestanol and 30% more cholesterol. In bile, ten times more cholestanol and substantial quantities of cholesterol precursors were found, but virtually no chenodeoxycholic acid was secreted. These findings indicate that symptoms develop at a variable pace and probably result from tissue accumulation of both sterols. The secretion of cholesterol precursors in the bile and elevated tissue sterol concentrations suggest overactive hepatic sterol synthesis, which we believe is related to a block in chenodeoxycholic acid production.

AB-344-72

KLOSTER FE, BRISTOW JD, SEAMAN AJ: Cardiac Catheterization During Anticoagulant Therapy. Amer J Cardiol 28:675-678 (Dec) 1971*

Sixty-three patients receiving anticoagulant therapy with sodium warfarin underwent cardiac catheterization with prothrombin-proconvertin values between 4% and 30%. The anticoagulant dose was omitted the day before and resumed the evening of catheterization. Procedures included 43 right heart studies by venous cutdown, 26 transseptal left heart catheterizations, 42 percutaneous retrograde femoral arterial catheterizations, eight transthoracic cardiac punctures and 55 percutaneous brachial arterial catheterizations.

In one patient left hemothorax developed after transthoracic cardiac puncture. In a second minor bleeding from the femoral arterial puncture site occurred after premature ambulation. No extensive bleeding or difficulty in obtaining hemostasis occurred. Cardiac catheterization can be performed with reasonable safety during anticoagulant therapy with the prothrombin-proconvertin time in the therapeutic range. Problems in reestablishing anticoagulant control are avoided, and the patient is not exposed to the increased risk of thromboembolic complications incurred with interrupted therapy.

AB-345-72

MOUNT LA, BRISMAN R: Treatment of Multiple Intracranial Aneurysms. J Neurosurg 35:728-730 (Dec) 1971*

The authors report a series of 70 patients with 161 multiple intracranial aneurysms. There was no mortality in 23 patients in whom all aneurysms were treated intracranially. Unoperated aneurysms later caused morbidity or mortality in eight of 33 patients. The authors believe that patients who have had a subarachnoid hemorrhage should have four-vessel arteriography to identify all aneurysms, and that all surgically accessible aneurysms should be treated, preferably intracranially in good-risk patients who have no disabling neurological deficit.

AB-346-72


Monkey spinal cords were subjected to measured impacts sufficient to produce paraplegia in most instances, and the monkeys were perfused with 20% Microopaque suspension. Microangiograms of injured segments were compared with those of noninjured segments and controls. The most striking finding was diminished perfusion of the intrinsic arteries. This was proportional to the severity of the impact and the time interval from trauma until perfusion. Focal dilatations and constrictions of intrinsic arteries and other vascular changes were noted.

AB-347-72


In experiments on living cats ocular volume changes were measured at various intraocular pressures after acute common carotid occlusion. A semilogarithmic relationship was found between ocular blood volume changes and the level of intraocular pressure after carotid occlusion. The slope of this relationship, termed the "coefficient of vascular rigidity," was found to correspond to similar measurements made in enucleated cat eyes by direct ophthalmic artery perfusion. The results of this study permitted a quantitative approach to the measurement of vascular rigidity in human eyes by using the carotid compression-tonography test with the 5.5 and 10.0 gm plunger weights. The normal coefficient of vascular rigidity is approximately 0.0238.
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AB-349-72
MOZERSKY DJ, HOKANSON DE, BAKER DW, SUMNER DS, STRANDNESS DE JR: Ultrasonic Arteriography. Arch Surg 103:663-667 (Dec) 1971*

A new ultrasonic technique for arterial visualization has been developed in our laboratory. The method produces images of arteries which are comparable with those obtained by roentgenographic means. Thus far, we have visualized the carotid arteries, arch of the aorta, abdominal aorta, iliac artery, and the femoral and popliteal vessels. The method has some advantages over x-ray angiography in that it is completely free of risk and discomfort, is cheaper, and provides views that are unobtainable by any other means.

AB-350-72
HEYDEN S, WALKER L, HAMES CG, TYROLER HA: Decrease of Serum Cholesterol Level and Blood Pressure in the Community. Seven to Nine Years of Observation in the Evans County Study. Arch Int Med 128:982-986 (Dec) 1971*

There is a tendency to replace long-term epidemiological studies of vascular diseases with intervention studies in the hope to prevent them. Two main factors singled out for intervention on a community level are hypertension and hypercholesterolemia. It was learned from clinical studies in the past, usually involving small numbers of subjects, that for lack of health education, money, and transportation and because of poor motivation or the development of side effects, or both, drug therapy of asymptomatic chronic conditions other than diabetes is being frequently interrupted or stopped. Before embarking on an intervention study, we were interested in finding out to what extent the present medical management has influenced hypertension and hypercholesterolemia in the community over an 87-month period. Significant decreases of blood pressure had occurred in 6.5% of whites and 4.6% of blacks, significant decreases in cholesterol in 7.4% of whites and 5.6% of blacks.

AB-351-72
BAILEY EL, HARPER TA, PINKERTON PH: The "Therapeutic Range" of the One-Stage Prothrombin Time in the Control of Anticoagulant Therapy: The Effect of Different Thromboplastin Preparations. Canad Med Assoc J 105:1041-1043 (Nov 20) 1971*

Commercially available thromboplastin reagents and two human brain preparations have been compared using the one-stage prothrombin time and plasma samples from patients receiving long-term oral anticoagulant therapy. Considerable variation is noted between various thromboplastins using the same plasma sample. The commercially available thromboplastins give shorter prothrombin times than do human brain preparations. With the latter, the "therapeutic range" is represented by a prothrombin time of about 1.8 to 3.0 times the normal control value, whereas with commercial preparations the "therapeutic range" is about 1.25 to 1.75 times normal. The implications of these observations are discussed; the desirability of standardization of the one-stage prothrombin time is emphasized.

AB-352-72
VREEKEN J, VAN AKEN WG: Spontaneous Aggregation of Blood Platelets as a Cause of Idiopathic Thrombosis and Recurrent Painful Toes and Fingers. Lancet 2:1394-1397 (Dec 25) 1971*

Spontaneous in-vivo aggregation of blood platelets was considered to be the cause of recurrent venous thromboses and recurrent painful attacks in toes and fingers of a 52-year-old man observed since April, 1966. The symptoms disappeared during treatment with substances inhibiting platelet aggregation but not with coumarin derivatives. A constant relationship could be demonstrated between the degree of drug-induced inhibition of in-vitro platelet aggregation and the clinical status.

AB-353-72
DAVIES DW: The Laboratory Control of Intravenous Heparin Therapy. Med J Aust 2:1001-1005 (Nov 13) 1971*

A laboratory protocol for the monitoring of continuous intravenous heparin therapy has been examined in the present study. More than 500 samplings were tested in the course of a six-month survey period, involving 113 heparinized patients. The procedure essentially invokes the aid of three simple and familiar test methods: (a) the thrombin clotting time (TCT), which selects those patients who show positive antithrombin effect from those who do not; (b) the fibrinogen titre (FbT), whereby free antithrombin may be assayed in those plasma samples selected by the TCT; and (c) the activated partial thromboplastin time (APTT), the use of which in this particular context has been suggested by other writers. A fourth test, the one-stage prothrombin time, while insensitive to heparin effect, is included as a routine check on unrelated coagulation defects which may not be detected by the other methods.

It has been observed that the TCT is a reliable screening test, and that there is good correlation...
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between the results of the APTT and FbT in the assessment of free antithrombin effect, and appropriate maintenance ranges for each parameter have been proposed.

AB-354-72
PAFFENBARGER RS JR, WING AL: Chronic Disease in Former College Students. XI. Early Precursors of Nonfatal Stroke. Amer J Epidem 94:524-530 (Dec) 1971*

Doctor-diagnosed stroke was reported by 102 of 10,327 men who had attended Harvard University, 1916-1940, and who had returned a usable, self-administered mail questionnaire in 1966. A 67% response was achieved from a single mailing and the reliability and validity of answers were found to be generally acceptable. The mean age of subjects was 54 years at time of stroke occurrence, while the mean age of respondents ranged from 64 for the five earliest college classes to 47 for the five most recent classes. Examination of university medical records of these former students revealed four characteristics in youth that predisposed to increased incidence of nonfatal stroke in later life: higher levels of blood pressure, increased weight for height, shorter body stature, and cigarette smoking. Paired combinations of any of the four characteristics had an additive or greater effect on stroke incidence. Similarly, questionnaire responses in 1966 from these former students revealed four high-risk characteristics that associated with an increased prevalence of nonfatal stroke: high blood pressure, coronary heart disease, diabetes, and a history of parental hypertension. High blood pressure exerted the strongest influence on prevalence of nonfatal stroke, both singly and when paired with the three other characteristics. High blood pressure in the former students and a history of parental high blood pressure, both determined by questionnaire, were each better predictors of nonfatal stroke than higher levels of blood pressure assessed in college.

AB-356-72

Acetylsalicylic acid inhibits the hexokinase activity of human lymphocytes in vitro. The effect is proportional to the concentration and is readily demonstrable at concentrations greater than 2-3 mMols per liter. In agreement with this, a reduction in the glucose-C14-decarboxylation rate is seen.

This inhibitory effect could be the cause of the observed deterioration of the lymphocyte transformation and C14-thymidine incorporation in the presence of acetylsalicylic acid. Corresponding to the evident glucose-competitive mechanism of the acetylsalicylates, the inhibition of the thymidine incorporation in stimulated lymphocytes was reversed by increasing the glucose concentration of the culture medium. The results would seem to indicate an immunosuppressive action of acetylsalicylic acid.

AB-357-72
SWAYE PS, GIFFORD RW JR, BERRETTONI JN: Dietary Salt and Essential Hypertension. Amer J Cardiol 29:33-38 (Jan) 1972*

Dietary intake of sodium chloride was studied in 717 patients with essential hypertension and 819 unequivocally normotensive patients. In the normotensive group 21.2% (174 of 819) stated that they added salt to food before tasting it, whereas 22.7% (163 of 717) of the hypertensive group had this habit. Of 43 hypertensive women who added salt to food before tasting it, 17 (39.5%) had diastolic blood pressure greater than 120 mm Hg, compared to 56 (17.2%) of 325 hypertensive women who did not add salt before tasting the food (P < 0.0006). Of 43 hypertensive women who added salt before tasting, 5 (11.6%) had either or both retinal hemorrhages and exudates with or without papilledema; of 314 women who did not add salt before tasting, only 8 (2.6%) had retinopathy of this severity (P < 0.003). Salt consumption did not influence the severity of hypertension in men as reflected by diastolic blood pressure or hypertensive retinopathy. However, hypertensive heart disease manifested by electrocardiographical evidence of left
ventricular hypertrophy or roentgenographical evidence of cardiomegaly, or both, was encountered in 47 (39.2%) of 120 hypertensive men who salted their food before tasting it, compared to 51 (22.3%) of 229 hypertensive men who did not add salt before tasting \( P < 0.0008 \). Salt consumption made no difference with regard to the prevalence of hypertensive heart disease among women.

Hypertension was more prevalent among patients with a family history of hypertension than among those without such a history. No significant differences were found between hypertensive and normotensive patients in regard to dietary history of salt consumption. However, dietary salt consumption may play a role in determining the severity of hypertension once it has developed.

AB-358-72
VON MAUR K, NELSON EW, HOLSINGER JW JR, ELIOT RS: Hypersensitive Carotid Sinus Syncope Treated by Implantable Demand Cardiac Pacemaker. Amer J Cardiol 29:109-110 (Jan) 1972*

A patient with hypersensitive carotid sinus syncope was treated by implantation of a permanent demand cardiac pacemaker. The observations suggest the value of demand pacing for persons whose major manifestation is significant bradycardia followed by hypotension. The potential value of this form of therapy can be tested in the individual case by temporarily stimulating the carotid sinus and electrically pacing the heart while monitoring both rhythm and mean arterial pressure.

AB-359-72

An electron microscopic study was carried out on the healing process of arterial lesions in hypertensive rats; these lesions resemble the plasmatic arterionecrosis seen in human hypertensive intracerebral hemorrhage. Fibrinoid substance deposited in the arterial intima of hypertensive rats disappeared with or without leaving cellulosilberous intimal tissue after continuous administration of antihypertensive drugs. Fibroblast-like smooth muscle cells, endothelial cells, and blood-derived mononuclear cells took part in the healing process of the intimal fibrinoid degeneration; the fibrinoid substance was phagocyte by fibroblast-like smooth muscle cells and blood mononuclear cells or dissolved by fibroblast-like smooth muscle cells. Hyaline droplets, thought to represent phagocytized fibrinoid substance, were seen in the intimal smooth muscle cells. The cells also participated in the formation of ground substance and collagenous and elastic fibers. These intimal smooth muscle cells are considered to be partly derived from endothelial cells, because they were first found immediately beneath the endothelium during the healing process, because endothelial cells themselves showed myofilaments and fusiform dense bodies, because intimal cells were not found in the normal rat mesenteric arteries, and because degenerative changes were severe in the medial smooth muscle cells.

AB-360-72

Rats made hypertensive by bilaterally constricting their renal arteries were intermittently given antihypertensive drugs to cause their blood pressure to fluctuate; the intima of their mesenteric arteries was then investigated electron microscopically. The intimal fibrinoid degeneration showed a much weaker tendency to heal than that of the previously reported rats treated continuously with antihypertensive drugs (Kojimahara et al., 1971), and the arteries showed marked dysoria associated with endothelial injury and thrombus formation. Endothelial cells that had migrated from the endothelium into the subendothelial space became intimal cell which, after proliferation by mitosis, formed myofilaments in their cytoplasm, turning into fibroblast-like smooth muscle cells (modified smooth muscle cells) in the intima. Thus some of the smooth muscle cells that proliferated in the intima and took part in the organization of the intimal fibrinoid substance were considered to be derived from endothelial cells.

AB-361-72
FEOLA R, MATAKAS F, RAFII MR: Cerebral Form of the Wegenerschen Granulomatose mit strangförmiger Entmarkung. (Cerebral Manifestation of Wegener's Granulomatosis with Funicular Demyelination.) Virchows Arch (Path Anat) 354:169-178, 1971 (Springer-Verlag, publisher) *

A case of Wegener's granulomatosis with cerebral manifestation is reported. Apart from the inflammatory process of the upper respiratory tract, kidneys, and other organs, granulomas were
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found in the base of the brain, in the brain stem, and in the cranial nerves. In the ventral and ventrolateral tracts of the medulla and spinal cord a demyelination had developed. The demyelination is regarded as a process independent from the underlying angiitic granulomatous disease. The relation of the reported case to progressive multifocal leukoencephalopathy and funicular demyelinations in carcinosis is discussed.

AB-362-72
ABUD-ORTEGA AF, RAJPUT A, ROZDILSKY B: Observations in Five Cases of Spontaneous Cerebellar Hemorrhage. Canad Med Assoc J 106:40-42 (Jan 8) 1972*

Five cases of spontaneous intracerebellar hemorrhage are reported. Three had a vascular malformation and two had mild hypertension. The presenting symptom was sudden headache followed by nausea and vomiting. Signs of brain stem dysfunction without prominent cerebellar deficit were the commonest feature. Meningeal involvement was present in the majority of cases. Unsuspected sudden death can occur. It is suggested that patients below the age of 30 who present with sudden headache followed by brain stem dysfunction, and patients over the age of 45 who present this picture along with subarachnoid hemorrhage, should be investigated urgently with contrast studies for possible cerebellar hemorrhage.

AB-363-72
ADELOYE A, ODUNTAN SA: Changes in Hemodynamics and Blood Gases During Carotid Cerebral Angiography With Sodium-Methylglucamine Diatrizoate (Urografin 60%). Brit J Radiol 44:949-954 (Dec) 1971*

In 15 Nigerians the cardiorespiratory changes following intracarotid injection of sodium methylglucamine diatrizoate (60% Urografin) during cerebral angiography were compared with those observed in nine patients who received injections of equal amounts of physiological saline. Urografin was found to be closely similar to physiological saline in its effects on blood gases, and the absence of disturbance of the pH suggests that its tissue tolerance is good. Although it differed from saline in its cardiovascular effects, these were not serious ones, as they were not accompanied by any noticeable and significant neurological disturbance in any patient, even in those with cerebrovascular disease and arterial hypertension in whom a fall in blood pressure was more marked. This study confirms the safety of 60% Urografin as a contrast material in carotid cerebral angiography in Nigerians.

AB-364-72

In a long-term study of women taking the combined estrogen/progestogen oral contraceptives Ortho-Novin and Norinyl-1 the follow-up has been continued for three years and four years respectively.

Acceleration of both "intrinsic" and "extrinsic" clotting tests and of specific factor VII and X assays, reported previously at the nine-month stage, persisted throughout the period of study. Acceleration of Chandler's tube platelet aggregation and hypercoagulable thrombelastographicpatterns were recorded. There was, however, no evidence of a cumulative effect after the first nine months.

AB-365-72

Gamma globulin deposits were found in the choroid plexus of two patients with systemic lupus erythematosus and mental disturbances but not in the choroid plexus of controls. The cerebrum, cerebellum, and brain stem were examined, but no striking neuropathological or immunopathological abnormalities were found in the brain substance or cerebral vessels. Immunological and electron microscopy studies suggest that these deposits are immune complexes, probably derived from the blood, like those deposited in the glomerulus in lupus nephritis. These previously unreported observations focus attention on the possible role of the choroid plexus in the pathogenesis of the nervous and mental manifestations of systemic lupus erythematosus.

AB-366-72
GOTOFF SP, SMITH RD, SUGAR O: Dermatomyositis With Cerebral Vasculitis in a Patient With Agammaglobulinemia. Amer J Dis Child 123:53-56 (Jan) 1972*

This paper describes a case of dermatomyositis occurring in a patient with agammaglobulinemia. A major manifestation of the disease process was subarachnoid hemorrhage, presumably due to central nervous system vasculitis. Typical changes of dermatomyositis were found in the skin, muscle, gastrointestinal tract, endocardium, epididymis, and brain. No immunoglobulins or B1 C-globulin were localized in the sections of skin or
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muscle. The failure of the patient's peripheral blood lymphocytes to respond to specific antigens in vitro suggests a qualitative disorder of cell-mediated immunity which may have predisposed to the development of dermatomyositis.

AB-367-72

In an epidemiological study of 1,118 free-living volunteers, aged 25 to 79 (552 male, 566 female), drawn from eight counties of the Central Valley, California, the following determinations were included: a medical history, blood pressure, resting electrocardiogram, plasma total cholesterol and glycerides (following a light, fat-free breakfast), and (when lipids were considered to be elevated) plasma lipoproteins determined by electrophoresis. A subgroup of the entire study population (494 male, 503 female) free of overt diabetes and electrocardiographical abnormalities, and with diastolic blood pressure not above 100 mm Hg, that was considered to be clinically "normal," forms the basis of this report.

Significant sex differences for mean levels of total cholesterol were absent or of small magnitude at all age decades up to and including the seventh. In contrast, glyceride levels for men were significantly higher than for women aged 25 to 59, and differences were substantial. Beyond the seventh decade, females had higher mean levels of both plasma total cholesterol and glycerides.

The type IV lipoprotein pattern was the most common abnormality (8.6%) within the entire normal population and was 2.7 times as common in men (13%) as in women (4.8%). Type II pattern was less common overall (3.7%) and was more frequent in women than in men. Types III (0.2 to 0.4%) and V (0.2%) were both very uncommon, and type I was not encountered. Results were similar when the entire population (normal and abnormal) was considered.

These findings suggest that sex differences in plasma total-cholesterol level cannot account for the known male preponderance in coronary heart disease within the population studied. Prolonged elevation of plasma glycerides (usually expressed as the type IV pattern) in males during the years when atherogenesis is occurring might account for the sex difference.

AB-368-72
SCHETTINI A, MCKAY L, MAHIG J, MODELL JH: The Response of Brain Surface Pressure to Hypercapnic Hypoxia and Hyperventilation. Anesthesiology 36:11-12 (Jan) 1972*

Intracranial pressures (cisternal cerebrospinal fluid and brain surface pressures) were measured in nine anesthetized dogs during and after experimental hypercapnic hypoxia. Both pressures increased significantly after 20 minutes of hyperventilation with the hypoxic mixture (\(P_{aO_2} 20 \pm 7.3\) torr; \(P_{aCO_2} 87 \pm 7.9\) torr). When the dogs were subsequently hyperventilated with oxygen, the cerebrospinal fluid pressure rapidly declined, but pressure at the brain surface remained twice the control value. This pressure dissociation was even more striking when the dogs were then given an infusion of distilled water intravenously. These findings suggest that swelling of the brain occurs during hypercapnic hypoxia and is not reversed by an hour of hyperventilation. The lack of correlation between cisternal CSF and brain surface pressures suggests that CSF was displaced from the cranium while brain volume expanded. CSF pressure did not, therefore, reflect the actual pressure of the brain.

AB-369-72
TAKESHITA H, OKUDA Y, SARI A: The Effects of Ketamine on Cerebral Circulation and Metabolism in Man. Anesthesiology 36:69-75 (Jan) 1972*

The effects of ketamine on cerebral circulation and metabolism were studied in ten healthy patients before elective surgical operations. With intravenous administration of ketamine in two increments (3 mg/kg total), cerebral blood flow increased from a control value of 47 to 76 ml/100 gm/min and cerebral vascular resistance decreased from 1.91 to 1.38 mm Hg/ml/100 gm/min. Cerebral perfusion pressure and \(P_{aCO_2}\) increased from 88 to 102 mm Hg and from 36.0 to 39.7 mm Hg, respectively, after ketamine. These data indicate that the increase in cerebral blood flow was mainly the result of cerebral vasodilation caused by ketamine. \(\text{CMR}_{O_2}\), \(\text{CMR}_{gлюкозы}\) and \(\text{CMR}_{lактата}\) as indices of cerebral metabolism did not change significantly after ketamine.

AB-370-72

Cerebral microembolism with carbon microspheres was studied by simultaneous radioactive...
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tracer determination of the red blood cell, albumin, iodoantipyrine, and pertechnetate spaces in the rat brain. Brain edema was evident beginning at four hours after embolization and was associated with decreased cerebral blood volume. Early edema was not accompanied by abnormal capillary permeability to macromolecules; however, the albumin space was increased at later times. Increases in the whole brain and the more heavily embolized right hemisphere pertechnetate spaces developed prior to similar changes in the albumin space. The iodoantipyrine space did not reliably reflect total brain water possibly due to rapid hepatic deiodination of this molecule. Our results suggest that multiple radioactive isotope label space estimation can serve as a sensitive tool for evaluation of pathophysiological changes in ischemic brain injury.

AB-371-72

Two cases of intracerebral hematoma associated with extravasation of contrast material in the region of the basal ganglia are presented. The angiographical finding of intracerebral extravasation of contrast material is rare. Apparently it occurs only when there is profuse active bleeding, but it is not seen when a tamponade is present. Both cases were autopsied and large destructive hematomas found. The rupture of microaneurysms in the basal ganglia appears to be the cause of the hematomas.

AB-372-72

Angioscanning is the study of brain circulation and vascular supply of brain lesions during the first circulation time after the intravenous injection of Technetium 99m. Vascular lesions tend to show a delay in hemispheric perfusion. Carotid occlusion will be associated with an ipsilateral decrease in uptake in its territory of supply. Intracerebral hematomas will show an important decrease in uptake in an area of moderate involvement. Subdural hematomas are demonstrated by the peripheral location of the defect. Cerebral tumors, like angiomatous meningiomas, will show an area of increased uptake. Malignant tumors tend to show a decreased uptake in all the lesions or just peripherally.

This new method is helpful but does not distinguish between infarcted lesions and malignant lesions. (Original in French)

AB-373-72

The authors report four cases of arteriovenous aneurysm in the area of the corpus callosum. They stressed the radiological features which are pertinent to the surgical removal of these lesions. They distinguish three types of malformations: first, an anterior type at the level of the genu of the corpus callosum, supplied by the branches of the anterior cerebral artery; secondly, an intermediate type located near the body of the corpus callosum supplied by branches of the pericallosal artery; and thirdly, a posterior type near the splenium supplied mainly by the posterior choroidal artery and the terminal branches of the pericallosal artery.

Clinical and surgical aspects of these arteriovenous malformations are discussed. (Original in French)

AB-374-72

Morphological studies of the circle of Willis have shown that the segments are equal and symmetrical in the fetus and unequal and variable in the adult.

Angiographical studies performed on cadavers and patients have clearly demonstrated that various head movements can compress the carotid and vertebral arteries. This reduces the flow in certain channels, and produces changes in the anastomotic vessels of the circle of Willis. In other words, there would be functional changes in the dynamics of flow in the circle with various head movements. These physiological variations and pathological lesions later in life would explain the variable configuration of the circle in the adult, which does not seem to be explained by faulty embryological development. (Original in French)

AB-375-72

Postmortem studies in 17 cases of "brain death" are reported. Inflammatory reaction was absent in 14 of the cases even though the patient had
ABSTRACTS

survived the acute insult one to seven days with adequate cardiorespiratory support. The three cases with inflammatory changes included herpes simplex encephalitis, cerebral infarct and trauma. The lack of reaction in the first 14 cases may be attributed to slowing or blockage of blood flow to the brain in “brain death.”

AB-376-72


Occlusion of the central retinal vein produces no retinal damage while central retinal artery occlusion produces retinal infarction. Hemorrhagic infarction is produced by occlusion of both vessels (artery and vein). Often the transient nature of the arterial block results in negative fluorescein angiography, as the circulation is re-established within a few hours or days. The sequence of events is probably arterial occlusion leading to slowing of retinal circulation, venous stasis, and then thrombosis. Hemorrhagic infarction results when retinal arterial circulation is re-established.

AB-377-72


Platelet aggregation induced by collagen in platelet-rich rabbit plasma can be inhibited by acetylsalicylic acid (ASA). Incubation time and concentration of ASA are factors related to the extent of inhibition. Saliyclic acid is 50 to 100 times less potent than ASA. The ASA effect could not be reversed by repeated washing and resuspension; salicylic acid effect was abolished with washing. Platelets are acetylated directly by ASA and this is related to inhibition of aggregation. Platelet aggregation is inhibited by ASA in vitro and in vivo.

AB-378-72


The results of 349 operations for carotid artery occlusive disease are reported. TIAs were the manifestations in 246 of the carotid artery lesions with 88% of these presenting as classic carotid artery occlusions, i.e., ipsilateral eye symptoms, contralateral motor or sensory symptoms or speech difficulties. In 92% of carotid artery stenoses either a bruit was heard over the stenosed artery or ophthalmodynamometry demonstrated a significant reduction in retinal artery pressure. Ninety-one percent of the patients operated upon for asymptomatic lesions or TIAs improved or were normal at last follow-up examination; operative mortality in this group was 2%. Seven of 19 patients operated upon with progressive strokes died in the early postoperative period. Fifteen of 93 patients operated upon with completed strokes died. Carotid surgery is not indicated in the patient with a progressive stroke; it is rarely indicated in completed strokes, and certainly never indicated within the first two weeks of onset of an acute stroke.

AB-379-72


Ten normal subjects were subjected to periods of breathing air of low oxygen concentration (11.5%) and high oxygen concentration (43.5%) to investigate the effect on the fibrinolytic mechanism. Previous studies have indicated that fibrinolytic activity has been stimulated by hypoxic periods such as drowning, strangulation and anaphylaxis. The results of this study failed to confirm this theory. In none of the ten subjects was there a significant alteration in fibrinolytic parameters (euglobulin lysis time, fibrinogen, plasminogen, etc.) with acute alterations in arterial oxygenation.

AB-380-72


Nine untreated patients with Wegener’s granulomatosis had elevated serum IgA levels (470 mg/100 ml versus 200 mg/100 ml in the normal control) and elevated mean parotid fluid IgA levels (4.7 mg/100 ml versus 1.8 mg/100 ml in the normal control). Immunological suppression with cyclophosphamide resulted in undetectable humoral and delayed hypersensitivity responses in seven of the nine patients; five of the seven retained previously established delayed hypersensitivity. The improved clinical picture following cyclophosphamide appeared to correlate with the immunosuppression.

AB-381-72


Fifteen patients were operated upon for subclavian artery stenosis. Each met the following
This includes a low-sodium diet, intravenous SfroJte, Moy-June J972 Vol. 3, poorer prognosis for recovery of hearing. In this group has vertigo which is associated with a regimen. The patient is hospitalized for four days on the basis of history (i.e., sudden hearing loss, turns of the organ of Corti. The diagnosis is made of temporal bone, and basic laboratory investigations. An empirical vasodilator program has been accomplished by the above procedure. This method has proved effective for correction of the subclavian steal syndrome and in those situations where procedures involving the carotid arteries are contraindicated, the subclavian-subclavian bypass should be considered.

**AB-382-72**


A subclavian-subclavian bypass was used to correct the hemodynamic abnormalities of the subclavian steal syndrome produced in dogs. Cephalad vertebral artery blood flow and adequate restoration of the occluded left subclavian artery were accomplished by the above procedure. This method has proved effective for correction of the subclavian steal syndrome and in those situations where procedures involving the carotid arteries are contraindicated, the subclavian-subclavian bypass should be considered.

**AB-383-72**


Sudden hearing loss is sensorineural in nature. Viral illness, vascular spasm or occlusion, and cochlear hydrops are the most prominent causes of hearing loss. Histopathological studies reveal primary damage to occur in the basilar cochlear turns of the organ of Corti. The diagnosis is made on the basis of history (i.e., sudden hearing loss, loud pop), auditory and vestibular testing, X-rays of temporal bone, and basic laboratory investigations. An empirical vasodilator program has proved to be the most successful form of therapy. This includes a low-sodium diet, intravenous histamine, oral nicotinic acid and probanthine, and 5% carbon dioxide inhalation. Anticoagulants are likewise administered. In cases of suggested viral etiology cortisone is added to the regimen. The patient is hospitalized for four days but the treatment is often continued for six weeks. Statistically it has been observed that caloric testing is abnormal in 50% of the patients with sensorineural hearing loss. Thirty-seven percent of this group has vertigo which is associated with a poorer prognosis for recovery of hearing. In patients treated within four days of hearing loss, 67% recovered hearing; in those treated with greater than four days of deafness, only 47% recovered. Emphasis is on early therapy.

**AB-384-72**


Five cases of carotid artery kinking resulting in obstruction are presented. Symptomatically these patients present with transient ischemic episodes, convulsions or hemiparesis. Angiographically, coiling and kinking of one or both carotid arteries can be demonstrated. The etiology of this condition is felt to be a congenital defect since kinking of the carotids has been observed in fetuses. In adults atherosclerosis seems to preclude elongation and tortuosity of the carotids. The authors feel that surgical reimplantation of the internal carotid to a lower level on the common carotid obliterating the tortuosity is the treatment of choice. In all five of the reported cases improvement was noted.

**AB-385-72**


This review of postpartum hemiplegia begins with presentation of three typical cases. The incidence is estimated at 1:2,000 pregnancies with death resulting in 1:30,000. These figures come from an earlier source; the frequency is probably greater than the above figures indicate with newer diagnostic criteria and techniques. The differential diagnosis in this group must include hemorrhage, cerebral emboli (especially in the patient with previous rheumatic heart disease), cerebral thrombosis, and various states which may complicate the hypercoagulable condition which is a recognized factor during pregnancy. Hypertension, diabetes mellitus, and syphilis must always be considered as precluding stroke factors. A complete treatment program is outlined from medical and surgical management to physical therapy and speech training.

**AB-386-72**


This study from the Charlotte Rehabilitation Hospital has used the self-portrait method (ability to see oneself in a simple self-copy drawing) to predict how independent the patient will become in the rehabilitation period. Capability for self care was used as the criteria for independence.
Patients were evaluated on three occasions during the hospital course. The patients with the poorer self portraits (i.e., much denial of their defects) were usually less capable of self care. Those patients with less denial (i.e., more independent) were more capable of caring for themselves. In using the self-portrait technique as a prognostic device it was 87% accurate in 61 patients (eight errors out of 61).

**AB-387-72**

**HOOSHMAND H, QUINN JC, HOUFF SA:** Cerebrospinal Fluid Pressure Changes With Chemotherapy for Intracerebral Hemorrhage. *Neurology* 22:56-61 (Jan) 1972

CSF pressure can be reduced with various chemical agents but often a post-pressure reduction overshoot period occurs. In dogs in which intracerebral hemorrhage had been produced and CSF pressure monitored urea and mannitol caused less overshoot of CSF pressure than hypertonic glucose and magnesium sulfate. A gradual decrease in CSF pressure with no overshoot was obtained with dexamethasone. The mannitol overshoot was prevented with dexamethasone and when given three hours after mannitol the CSF hypertensive effect was enhanced. Third ventricular shift was decreased in patients treated with dexamethasone during the first 24 hours after the hemorrhage. A mannitol and dexamethasone combination was no more effective in reducing third ventricular shift than dexamethasone alone. The mortality rate in the acute period following intracerebral hemorrhage may be decreased by administering dexamethasone alone or in combination with mannitol.

**AB-388-72**


The reversibility of cholesterol-induced aortic lesions in Rhesus monkeys was studied. Three groups were included: a control group (chow for eight weeks), a progression group (atherogenic diet for eight weeks), and a regression group (atherogenic diet for eight weeks and then chow for 16 weeks). The lesions in the progression group included lipid-laden monocytes immediately beneath the endothelium, increased lipid droplets in the smooth muscle cells, and moderate amounts of lipid in the extracellular spaces. In the regression group animals contained few lipid-laden monocytes and less lipid in smooth muscle cells. The study indicates that eight weeks of an atherogenic diet can produce aortic lesions and that qualitative changes in the lesions occur 16 weeks after withdrawal from the diet.

**AB-389-72**


An appraisal of the value of the death certificate as an indication of the presence of certain common diseases at death was made by comparing certificate diagnoses and autopsy findings in a series of 476 autopsies at a Jerusalem hospital. The death certificate data were limited as an indication of the presence of myocardial infarction, cerebrovascular disease and pulmonary embolism. The confirmation rate (the percentage with anatomical evidence of the disorder, among persons with mention of the disorder on the certificate) for cerebrovascular disease was 82% (fairly high). Sensitivity (percent with mention of the disorder on the certificate, among persons with anatomical evidence of the disorder) for cerebrovascular disease was 33% (not high). The false positive rate (mentioned on certificate but absent at autopsy) was low (3.2%).

**AB-390-72**


Using a porcine tissue plasminogen activator, three proteins capable of inhibiting the plasminogen activator were isolated. One of these fractions had not been recognized previously since it appeared in an area seldom investigated. Separation and identification of this new protein has not been completed.

**AB-391-72**


In ten human basilar arteries removed shortly after death, spontaneous autonomous activity could be demonstrated. The major findings were rhythmic and tonic responses and except in one instance seemed to be self-limited. A myogenic theory to explain cerebral vascular spasm is proposed.

**AB-392-72**


A gunshot wound to the head resulted in a vertebral arteriovenous fistula manifest by a roaring sound in the head and a loud bruit beneath the left ear. The fistula was demonstrated...
angiographically to be located in the left vertebral at about the second cervical vertebral level. Within one week of the injury proximal and distal ligation of the vertebral artery was accomplished. Two months later the entire fistula was removed.

AB-393-72

Angiography in a 52-year-old man with progressive hemiplegia showed tubular stenotic lesions in the right internal and external carotid arteries. Fibromuscular dysplasia was diagnosed by histologic examination of temporal artery segments. The arterial lesion was progressive as indicated by neuropathological examination. The natural history of this disorder is frequently nonprogressive and therefore surgical treatment best be delayed until there is clear evidence of an advancing lesion.

AB-394-72
DANESE CA, HAIMOV M: Inhibition of Experimental Arterial Thromboii in Dogs With Platelet-Deaggregating Agents. Surgery 70:927-934 (Dec) 1971

Segments of arteries in dogs were exposed and injured by intimection. The dogs had been pretreated with various platelet-deaggregating agents. The arterial segments were examined grossly for the presence of occlusion and histologically for platelet aggregates. The group treated with oral aspirin and dipyridamole had a significantly lowered incidence of occlusion and platelet aggregations. Arterial occlusion was more effectively prevented in animals treated with intravenous cyproheptadine than in those treated with heparin at a dose of 2 mg/kg.

AB-395-72

Talc and cornstarch emboli produced a characteristic retinopathy in 17 drug addicts following intravenous injections of crushed methylphenidate hydrochloride tablets. Small glistening crystals concentrated in the small vessels about the retina could be seen on ophthalmoscopic examination. Reduced vision presumably secondary to retinal edema was noted in two patients with pulmonary hypertension. In one case postmortem examination revealed histological evidence of talc and cornstarch particles in the retina and choroid as well as in the lung and brain. Careful ophthalmoscopic examination may help in confirming the cause of acute pulmonary hypertension.

AB-396-72

A benign form of central vasculitis has been described in nine patients all under the age of 40. The symptoms included decrease in visual acuity often of sudden onset favoring a vascular occlusion phenomenon. Retinopathy on ophthalmoscopic examination was striking. Retinal artery pressures were normal but venous pressures were elevated. Fluorescein studies revealed marked residual leakage of dye in relation to the disk and larger veins. Visual loss was associated with leakage around the macula. Resolution occurred over a period of several months with a return to normal visual acuity but occasionally with persistent micropsia. Residual fundus changes include venous sheathing and pigmentary changes at the macula. The predominant hemodynamic abnormality is a reduction in perfusion which is due to elevated venous pressure.

AB-397-72

A case of central retinal vein occlusion is reported in a 44-year-old woman who had profound iron-deficiency anemia (hemoglobin 6.2 gm/100 ml). Manifestations of the central vein occlusion in the left eye included blurring of the disk margin, venous engorgement, hemorrhages, soft exudates and macular edema. Other causes of central vein occlusion such as arterial circulatory changes, carotid insufficiency, aortic arch syndrome and glaucoma were excluded. Venous changes were thought to be secondary to anemic hypoxia; correction of the anemia was associated with improvement of the funduscopic picture.

AB-398-72

An organized system for care of the stroke patient is presented. The early organizational phase included in-service education (i.e., training the stroke team), discharge planning and follow-up, area resources development, and public education. A four-day basic course was given for the stroke team followed by continuing in-service education programs. The physician's role included admission evaluation, preparation of order sheet.
to initiate guidelines of management, and a discharge planning conference for adequate follow-up. The more organized approach has not been fully evaluated but so far has decreased the average hospital stay for the stroke patient by 2.7 days and lessened cost by $240 per patient. When attending a community of greater than a million people who are economically disadvantaged, the most efficient program must be sought.

AB-399-72

One hundred thirty-six anesthetized dogs were studied to evaluate changes in blood pressure caused by bilateral carotid artery occlusion (BCO) and by vertical tilt. In most dogs there was a direct relationship between these two responses. Vagotomy resulted in exaggeration of the BCO response while the tilt response was depressed. Investigation of cardiac output revealed absence of alteration during BCO but decreased cardiac output during tilt; after vagotomy, cardiac output increased during BCO but was further diminished during tilt. Drug-induced changes in tilt response, particularly in antihypertensives, were similar in dogs to those effects on postural hypotension in humans. The effects on the tilt response in anesthetized dogs may have predictive value with respect to drug effects on orthostatic hypotension in humans.

AB-400-72
EVANS DW, TURNER SM, GHOSH P: Feasibility of Long-Term Plasma-Cholesterol Reduction By Diet. Lancet 1:172-174 (Jan 22) 1972*

Forty hypercholesterolemic subjects were followed for 6 to 35 (mean 18.7) months after starting on diet. The basis of the diet was reduced fat and cholesterol intake with substitution of highly unsaturated for saturated and mono-unsaturated fatty-acid fats. Calorie intake was restricted in those associated hypertriglyceridemia. Plasma-cholesterol concentration fell by 66 mg per 100 ml (22%) in the group as a whole. Plasma-triglyceride fell by 57 mg per 100 ml (22%) in the group with prediet levels above 165 mg per 100 ml.

AB-401-72

A trial is reported of the effects of giving clofibrate to prevent progression of pre-existing ischemic heart disease. There were two groups randomly distributed between clofibrate (350 patients) and placebo (367 patients) regimens. The trial lasted about six years and was conducted in 19 hospitals in Scotland. The criteria of acceptance into the trial were precise and were monitored by one observer. The standards of diagnosis of events were defined and all protocols and electrocardiograms were read blind by one observer.

Three categories of patients were admissible to the trial: (1) patients with one myocardial infarction (W.H.O. E.C.G. criteria) between 8 and 16 weeks before the start of the trial; (2) patients with angina of a duration of 3 to 24 months, provided their E.C.G. showed signs of myocardial ischemia at rest or after exercise; and (3) patients with one recent myocardial infarction and pre-existing angina as defined above.

There were fewer deaths in patients with angina (categories 2 and 3 above) treated with clofibrate than in those on placebo. The mortality in the former group was reduced by 62% and this is a statistically significant difference. Clofibrate did not have any statistically significant effect in reducing the rate of nonfatal infarction in patients with angina or in those with myocardial infarction and pre-existing angina, though a beneficial trend was evident when both subgroups were combined (a 44% reduction compared with the placebo group). There was a significant reduction in all events (fatal and nonfatal) in patients with angina ("all anginas") in the clofibrate-treated group; the rate was reduced by 53%.

Clofibrate did not alter the overall mortality or morbidity rates in patients admitted to the trial with recent myocardial infarction without preceding angina of more than three months' duration. In one subgroup there was a statistically significant adverse effect in the clofibrate-treated group. The lack of any overall effect in patients with myocardial infarction might be related to the unexpectedly low mortality rate (2.97%) in the placebo group; it is usually in the region of 4% to 9% per annum after first myocardial infarction.

In patients categorized as "all anginas" there was significant reduction in events whether the initial serum cholesterol level was high (greater than 260 mg/100 ml) or normal. Clofibrate seemed to have a small but not significant beneficial effect in patients with myocardial infarction with initially high serum cholesterol levels, but was of no value in those with initially normal serum cholesterol levels. There was no significant relationship between the response or lack of response of serum cholesterol to clofibrate and the incidence of events either in patients with angina or in those with infarction.
The main conclusion of this trial is that clofibrate had a beneficial effect in reducing mortality and, to a lesser extent, morbidity in patients who presented with angina ("all anginas"). This effect was independent of initial serum cholesterol levels or the extent to which serum cholesterol was lowered. The drug had no significant overall effect on prognosis in patients with myocardial infarction alone.

**AB-404-72**


Preliminary to a comparative geographic study of atherosclerosis of the aorta and coronary arteries and of ischemic myocardial disease in Japanese men who lived in Hiroshima and Honolulu, four methods were evaluated for estimating the severity of atherosclerotic involvement of these vessels. Gross visual, grid-counting, point-counting, and the American Heart Association panel methods were compared. The gross visual method was quite subjective and, therefore, considered unreliable. The grid-counting method was tedious, fatiguing, and time-consuming. The point-counting procedure was acceptable for evaluation of atherosclerosis of the aorta, but it was difficult to use when marked and severe coronary atherosclerosis was present. The panel method was more objective than the gross visual method and was the easiest to use.

**AB-405-72**


Male albino rabbits were subjected to a single mechanical dilatation of the descending thoracic aorta with a balloon catheter. The animals were killed 3, 6, 14, 30, and 60 days later. Between the sixth and the fourteenth days after injury, all the aortas which had been dilated developed severe, gross arteriosclerosis. Microscopic examination showed destruction and degeneration in the form of necrosis and calcification as well as regeneration and repair including new formation of cells, intercellular substance, and fibers. Biochemical and histochemical analyses revealed an early increase in hyaluronic acid and water followed by an increase in chondroitin-4, 6-sulfate and a later increase in heparin sulfate, dermatan sulfate, and collagen. These alterations were related to the focal lesions in the aortic wall. The permeability of the aorta to 125I-albumin increased to a maximum three days after the dilatation, whereupon it decreased rapidly. The alterations were interpreted as nonspecific processes of repair in the vascular connective tissue. The pronounced dependence of the alterations on the time elapsed after injury must be considered in the study of vascular diseases where injury and repair may be involved.

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*Authors' abstract.
ABSTRACTS

AB-406-72

The aortic wall in rabbits was injured by pulling an inflated balloon catheter through the aorta. This was followed by an increase of the RNA-DNA ratio in the aortic wall three days after the injury. At the same time, the cathodic lactate dehydrogenase (LDH) isoenzymes composed of M subunits increased. The changes in LDH may reflect tissue hypoxia at the early phase after the injury. At six days protocollagen proline hydroxylase activity was increased, suggesting increased capacity for collagen formation in the injured aorta. Two weeks after injury the total content of hydroxyproline and DNA were increased, indicating connective tissue proliferation and hyperplasia in the injured aorta. The biochemical changes were interpreted as a repair response of the arterial connective tissue to injury. Gross arteriosclerosis of the aorta developed simultaneously with the biochemical alterations.

AB-407-72
FLAHERTY JT, PIERCE JE, FERRANS VJ, PATEL DJ, TUCKER WK, FRY DL: Endothelial Nuclear Patterns in the Canine Arterial Tree With Particular Reference to Hemodynamic Events. Circulation Research 30:23-33 (Jan) 1972*

The objective of the study was (1) to measure systematically the orientation, morphology, and population density of endothelial nuclei of the canine thoracic aorta and its major branches, and (2) to obtain evidence in a chronic in vivo preparation that altered flow patterns do indeed change patterns of nuclear orientation. For this purpose, a segment of the descending thoracic aorta was removed, opened longitudinally, and reclosed to form a tube with a new longitudinal axis 90° from the original vessel axis. The new segment was then sutured back in place. The animals were killed at suitable postoperative periods. Endothelial nuclear patterns were studied from en face photomicrographs of preparations stained with Evans blue dye. Results indicated: (1) In uniform vessel segments, e.g., middle and lower descending thoracic aorta, the nuclei were oriented parallel to the axis of the blood vessel, and the ratio of major to minor axes of the nucleus was large. The flow in these regions is known to be stable. (2) Nonaxial, less-ordered nuclear orientation with smaller ratios of major to minor axes were found in entrance regions of many major arteries and in the ascending aorta. (3) In chronic studies in which the flow pattern was altered, the nuclear pattern realigned in the direction of flow within ten days after surgery.

ITEMS OF INTEREST

KABINS SA: Interactions Among Antibiotics and Other Drugs. JAMA 219:206-212 (Jan 10) 1972

A review article which contains information on the interaction of coumarin drugs and various antibiotics.

SHERRYS S: Prospects in Antithrombotic Therapy. Amer J Cardiol 29:81-89 (Jan 10) 1972

A review article on current concepts of the pathogenesis of acute coronary thrombosis as these relate to antplatelet aggregating agents for prophylaxis and to thrombolytic agents for treatment.


This review is an excellent one and of interest for those physicians who employ coumarin drugs.

Med Clin N Amer 56:1-284 (Jan) 1972

This issue of Medical Clinics of North America contains a number of articles dealing with the clinical manifestations of bleeding, the function and abnormalities of platelets, normal and abnormal fibrinolysis, and indications as well as problems concerning anticoagulant therapy.


This is a reprint of a World Health Organization Memorandum, classification of hyperlipidemias and hyperlipoproteinemias.
Abstracts

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