

infusions at rapid rates in these normal subjects, are interpreted as due to slight pulmonary vasodilatation associated with temporarily increased blood volume. The fact that changes in pulmonary dynamics and lung volume, following rapid intravenous injections of large volumes of fluid in normal subjects, were at most only slight, in no way alters the clinical concept that when it is necessary to administer fluids intravenously in patients with a tendency toward pulmonary congestion and edema, because of cardiac, pulmonary, central nervous system, or renal disease, these infusions should be given at slower rates and with caution." 14 references.

J. C. M. C.

ALTSCHULE, M. D., AND ZAMCHECK, NORMAN: *Significance of Changes in Subdivisions of the Lung Volume in the Trendelenburg Position*. Surg., Gynec. & Obst. 74: 1061-1064 (June) 1942.

"Comparisons of the volumes of the various subdivisions of the total lung volume in patients in the sitting and in the recumbent position have been made by several authors. . . . No data are available, however, on the changes which occur when the patient assumes the Trendelenburg position. Since this position is employed routinely in certain surgical operations and with great frequency in the treatment of shock and peripheral vascular disease, it appeared desirable to study the effect of the head-down position on pulmonary volume and dynamics. . . . Measurements of the subdivisions of the total lung volume and of the pulmonary dynamics were made in 6 normal subjects in the Trendelenburg, flat, and head-up positions. The residual air was unchanged in the various positions studied, and the vital and total capacities varied only slightly. The vital and total capacities were lowest in the Trendelenburg, inter-

mediate in the flat, and greatest in the head-up positions. Striking changes in reserve and complemental air volumes occurred. The reserve air was lowest in Trendelenburg and greatest in head-up positions; the complemental air varied inversely with reserve air. These changes were interpreted as due to a cephalad shift of diaphragm in patients in head-down position. The changes in the functional residual air are significant in that they afford information on changes in the intrapleural pressure. Decrease of the functional residual air in the Trendelenburg position suggests that changes in intrapleural pressure occur in this position which tend to make respiration more difficult and impair return of venous blood to heart. No consistent changes in respiratory dynamics were observed in the various positions studied." 15 references.

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KALTREIDER, N. L.; MENEELY, G. R., AND ALLEN, J. R.: *The Effect of Epinephrine on the Volume of the Blood*. J. Clin. Investigation 21: 339-345 (May) 1942.

"A previous investigation has shown that as a result of a sudden rise in the venous and arterial pressures by exercise there is a prompt and definite decrease in the plasma volume. Further, moderate exertion is accompanied by a proportionate diminution in the blood volume, since the volume of the cells remains essentially the same. Only when the physical activity is severe are new cells added to the circulating volume. During the recovery period, the volume of the blood gradually returns to the resting value. It was suggested that the elevated capillary pressure produced by exercise caused increased filtration of fluid through the capillary walls, which in turn leads to a decrease in the plasma volume, and that the slight increase in cell volume during severe exercise was a result of extru-

sion of cells from the blood depots into the circulating blood. It was suggested that the latter was mediated through the sympathico-adrenin mechanism. If these factors are responsible for the alterations in the volume of the blood during exhaustive exercise, the administration of epinephrine might be expected to produce a similar picture, since this drug increases the systemic pressure and contracts the blood depots. The purpose of this communication is to report the observations of the blood volume before and after the subcutaneous injection of epinephrine in normal individuals, in patients with splenomegaly, and in 2 subjects whose spleens had been removed following rupture. . . .

"Measurements were made at rest of the volume of the blood and its components, and variations in the volumes were followed after the subcutaneous injection of 1 cc. of epinephrine (1-1000). Further observations included measurements of the blood hemoglobin and viscosity, serum proteins, venous and arterial pressures, velocity of the blood, and pulse rate. These observations lead to the following conclusions: 1. In normal individuals, following the administration of epinephrine, there is a prompt and definite decrease in the plasma volume, which persists in most cases for at least 45 minutes. In the majority of cases there is a slight increase in the cell volume. These alterations are associated with an increase in blood hemoglobin and viscosity and serum proteins. Following the administration of the drug, the systolic pressure increased while the diastolic pressure fell slightly. 2. In individuals who have polycythemia vera with splenomegaly, epinephrine causes a definite decrease in the plasma volume, a moderate increase in cell volume with little change in the total volume. 3. After the injection of epinephrine into 2 individuals whose spleens had been removed, there was a decrease

in both blood and plasma volumes, accompanied by a slight decrease in the cell volume. 4. The effects of severe exercise and of epinephrine on the components of the blood volume are similar." 13 references.

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RAY, B. S., AND STEWART, H. J.: *Observations and Surgical Aspects of the Carotid Sinus Reflex in Man*. Surgery 11: 915-938 (June) 1942.

"The diagnosis of hypersensitive carotid sinus reflex is made by the patient's history and a systematic examination of the carotid sinuses. Carotodynia sometimes is associated with the carotid sinus syndrome. The frequency of local abnormalities of the carotid arteries and adjacent tissues on the side of the hypersensitive sinus reflex suggests that the abnormal reflex results from pathology in the sinus. If symptoms of hypersensitive sinus reflex are disagreeable or incapacitating and not controlled by simple measures, surgical denervation of the carotid sinus is advisable. The operation causes only transitory alteration of the cardiovascular system. By anesthetizing the carotid sinus nerves it is possible to distinguish between syncope due to a hypersensitive sinus reflex and syncope due simply to cerebral anoxia resulting from carotid occlusion. The glossopharyngeal nerve in man is not in every instance the only nerve through which afferent impulses of the carotid sinus reflex are transmitted. Hypersensitivity of a carotid sinus reflex may play an important rôle in the production of cardiac arrhythmias, cardiac asystole, and fall in blood pressure occurring during operations, especially operations about the neck. Ether anesthesia cannot be counted upon to abolish a hypertensive sinus reflex. Infiltration with 1 per cent procaine of the carotid sinus nerves lying in the space between the internal and external carotids always temporarily abol-