

The results of this experiment demonstrate a direct effect of halothane on isolated myocardium apart from any circulatory, nervous or hormonal influences. Because the reduction in peak tension was coupled with a parallel and proportional decrease in the rate of tension development, it appears that the cardiac effects of halothane are primarily due to diminished active state intensity of the contractile elements of heart muscle.

References

1. Mahaffey, J. E., Aldinger, E. E., Sproue, J. H., Darby, T. D., and Thrower, W. B.: The cardiovascular effects of halothane, *ANESTHESIOLOGY* 22: 980, 1961.
2. Deutsch, S., Linde, H. W., Dripps, R. D., and Price, H. L.: Circulatory and respiratory actions of halothane in normal man, *ANESTHESIOLOGY* 23: 631, 1962.
3. Flacke, W., and Alper, M. H.: Actions of halothane and norepinephrine in the isolated mammalian heart, *ANESTHESIOLOGY* 23: 793, 1962.
4. Shimosato, S., Li, T. H., and Etsten, B.: Ventricular function during halothane anesthesia in closed chest dogs, *Circ. Res.* 12: 63, 1963.
5. Morrow, D. H., and Morrow, A. G.: The effects of halothane on myocardial contractile force and vascular resistance, *ANESTHESIOLOGY* 22: 537, 1961.
6. Koch-Weser, J.: Role of norepinephrine release in the interval-strength relationship of heart muscle, *J. Pharmacol. Exp. Ther.* 150: 184, 1965.
7. Awalt, C. H., and Frederickson, E. L.: The contractile and cell membrane effects of halothane, *ANESTHESIOLOGY* 25: 90, 1964.
8. Hill, A. V.: The heat of shortening and the dynamic constants of muscle, *Proc. Roy. Soc. (Lond. Ser. B.)* 126: 136, 1938.
9. Hill, A. V.: Effect of series compliance on tension developed in a muscle twitch, *Proc. Roy. Soc. (Lond. Ser. B.)* 138: 325, 1951.
10. Parmley, W. W., and Sonnenblick, E. H.: Series elasticity in heart muscle: Its relation to contractile element velocity and proposed muscle models, *Circ. Res.* 20: 112, 1967.
11. Hill, A. V.: Work and heat in a muscle twitch, *Proc. Roy. Soc. (Lond. Ser. B.)* 136: 220, 1949.
12. Blinks, J. R., and Koch-Weser, J.: Physical factors in the analysis of the actions of drugs on myocardial contractility, *Pharmacol. Rev.* 15: 531, 1963.
13. Goldberg, A. H.: A study of the force velocity relationships of the intact canine heart, *Dissertation Abstr.* 26: 3452, 1965.
14. Brodtkin, W. E., Goldberg, A. H., and Kayne, H. L.: Effect of halothane on myofibrillar ATPase activity, *Clin. Res.* 17: 472, 1966.

Anesthesia

INSULIN IN PREGNANCY Metabolic changes occur in pregnancy which may be termed diabetogenic. These changes include hyperlipemia, decreased blood sugar levels after tolbutamide or insulin administration, altered changes in serum inorganic phosphate following carbohydrate challenge, and increased insulin requirements in pregnant diabetics. Hyperinsulin binding by plasma proteins is one possible explanation for these changes. By using chromatographic and radio-labeling techniques the previously known hyperinsulinemia of pregnancy was confirmed; however, no increase in insulin binding could be found in the serum during pregnancy. Other possible mechanisms of insulin resistance in pregnancy are discussed. (Burt, P., and others: *The State of Insulin in Blood During Pregnancy*, *Obstet. & Gynec.* 28: 836 (Dec.) 1966.)

Downloaded from <http://pubs.asahq.org/anes/article-pdf/28/5/845/6166336/0000542-196709000-00014.pdf> by guest on 05 December 2023