Different degree of heart failure

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Sethi and colleagues (1997) showed that catalytic activity of adenylyl cyclase was reduced in the left ventricle when heart failure was created by ligating the coronary artery of rats. Bräunig et al. (2014) attempted to reproduce these findings, but failed to find a substantial reduction in adenylyl cyclase in the left ventricle.

There may be several reasons for the discrepancy between the two papers, and Bräunig discusses some of these. However, that paper does not mention what seems to be an important reason. Even though both investigators used the same technique to induce heart failure, the extent of heart failure differed. For example, Sethi observed a 34 % increase in LV weight (comparing rats with a ligated coronary artery to rats with sham surgery), while Bräunig found only a 5 % increase (a 53 % increase vs. 5 % increase if the heart weights were

normalized to body weights). Sethi found a 5.75-fold increase in the LVEDP, while Bräunig observed a 1.56-fold increase.

Given that Bräunig did not induce as much heart failure as Sethi, it does not seem surprising that the effects on adenylyl cyclase differed.

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