

MAINTAINED MYOCARDIAL ATP WITH LONG TERM RIBOSE.
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Previous work by us revealed that infusion(Inf) of ribose(R) greatly enhanced return of myocardial ATP levels following ischemia(Isc). Because the effect of Isc on AMP catabolism may persist, we investigated the R Inf period required to maintain ATP. Following global myocardial Isc(20' normothermia on bypass), groups of dogs received R(80mM, 1 ml/min for 24°, 48°, or 120°) or normal saline(NS) (48°, 1ml/min). Ventricular biopsies were obtained for adenine nucleotide content (Table) and 15 µm radiolabeled spheres used to measure blood flow. (*P<0.05, 48° vs 72°, †P<0.05, NS vs R)

ATP levels (µmol/mg wet wt, mean±SEM)

	NS(n=8)	R(24°, n=6)	R(48°, n=6)	R(120°, n=6)
Pre-Isc	5.00±0.18	4.95±0.22	5.09±0.17	5.20±0.32
24° af Isc	2.58±0.29	4.14±0.24 [†]	4.11±0.22 [†]	4.62±0.15 [†]
48° af Isc	2.70±0.37	3.95±0.34 [†]	4.61±0.39 [†]	4.41±0.27 [†]
72° af Isc	3.39±0.31	3.25±0.50	3.37±0.62*	4.40±0.38
120° af Isc	4.23±0.57	---	---	4.58±0.20

ATP levels fell to 50% of control values in all groups at the end of Isc (data not shown). R Inf resulted in a significant recovery of ATP at 24°, which was maintained for 120° in dogs continued on R. In the 24° and 48° groups, regenerated ATP levels fell after cessation of the R Inf while myocardial blood flow did not change(data not shown). Thus with early cessation of R, ATP levels fall to levels found in control dogs, and therefore, an extended Inf period (possibly 72°) must be maintained in order to achieve maximal benefit.