

Chatham J, R Challiss, G Radda, A Seymour. Studies of the protective effect of ribose in myocardial ischaemia by using ^{31}P -nuclear magnetic resonance spectroscopy. *Biochem Soc Proc* 1985;13:885-888.

In the ischaemic heart the balance between ATP production and utilization is disrupted. ATP levels decrease and the concentrations of ADP, AMP and IMP increase. Dephosphorylation of AMP and IMP by 5'-nucleotidase result in production of adenosine and inosine which may be lost from the cell, thus depleting the purine pool available for re-synthesis of ATP on re-perfusion. At the start of reperfusion there is little difference in ATP concentration between the three groups. After 30 min of re-perfusion the group with ribose present throughout the experiment exhibits significantly higher levels of ATP than the control group ($P < 0.05$). This difference remains relatively constant for the remainder of the re-perfusion period. The addition of ribose during re-perfusion only results in ATP levels within one standard deviation of the mean control group. Fig. 1(b) shows that there is no difference in ischaemic acidosis between any of the groups.

