Benzathine penicillin G kinetics were studied in patients with rheumatic heart disease after single intramuscular injection of 1.2 million units of benzathine penicillin G. Penicillin G plasma concentrations were measured by microbiological assay and fitted by least squares linear regression analysis to a monoexponential equation. Calculated elimination half-life ($t_{0.5}$) and rate constant ($k_{el}$) were $16.5 \pm 3.8$ day and $0.0532 \pm 0.011$ day$^{-1}$, respectively. Body clearance (Cl) was $570 \pm 50.9$ litre.day$^{-1}$ and the area under the curve (AUC$_0$ to $\omega$) was $1.66 \pm 0.19$ µg.ml$^{-1}$.day. The result shows that monthly intramuscular injection for rheumatic fever prophylaxis may be adequate.

Note: Pharmacokinetic parameters were shown as mean ± sem.