



<b>Title</b>	<b>Diastolic function correlates with the degree of iron overload in patients with haemoglobin H disease</b>
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## DIASTOLIC FUNCTION CORRELATES WITH THE DEGREE OF IRON OVERLOAD IN PATIENTS WITH HAEMOGLOBIN H DISEASE

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$\alpha$ -thalassaemia is common in Chinese. The Haemoglobin H (HbH) syndrome is a severe form of  $\alpha$ -thalassaemia characterised by anaemia, splenomegaly and HbH bodies in erythrocytes. Chronic haemolysis may lead to iron overload and cardiomyopathy. Previous study of 30 of our HbH patients showed a higher incidence of diastolic dysfunction compared to sex and age-matched normal controls. We hypothesise that diastolic dysfunction may be related to the degree of iron overload.

20 HbH patients (8M, 12F;  $48 \pm 15$  years) with mild anaemia (Hb  $8.8 \pm 1.7$  g/dl) and no clinical features of heart failure underwent echocardiography and the E/A ratio and isovolumic relaxation time (IVRT) were determined by transmitral Doppler. We found that plasma ferritin, an index of body iron stores, correlates with E/A ( $r = -0.67$ ,  $p = 0.001$ ) and IVRT ( $r = 0.53$ ,  $p = 0.02$ ) which are indices of left ventricular diastolic filling. Plasma ferritin did not correlate with ejection fraction, which was normal in these patients (mean 63%, range 50-74%).

In conclusion, iron overload may be associated with abnormal diastolic relaxation in HbH patients. Our results suggest that screening with echocardiography may be useful in those patients with high ferritin levels. Further studies are needed to see if early iron chelation therapy might prevent the progression of cardiac dysfunction.

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### SODIUM INTAKE IS A STRONG DETERMINANT OF DIASTOLIC BLOOD PRESSURE IN HYPERTENSIVE PATIENTS IN HONG KONG

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In Hong Kong, body mass index and ethanol intake are low but salt intake is high, so we investigated if sodium intake contributes to hypertension. We studied 50 untreated hypertensive patients and found that diastolic pressure correlated with 24 hour urinary sodium excretion ( $r = 0.52$ ,  $p = 0.0003$ ), even after adjustment for age, gender, body mass index, urinary potassium, ethanol intake and season ( $r = 0.47$ ,  $p = 0.006$ ) (fig.). Sodium excretion also correlated with ambulatory diastolic pressure ( $r = 0.53$ ,  $p = 0.01$ ,  $n = 22$ ). Measurements repeated 12 weeks later in untreated patients showed the same correlation ( $r = 0.60$ ,  $p = 0.02$ ,  $n = 14$ ). In contrast, systolic pressure did not correlate with sodium excretion ( $r = -0.04$ ), but increased with age ( $0.6 \pm 0.2$  mmHg/year,  $p = 0.001$ ). In a multiple regression analysis with diastolic pressure as the dependent variable, the regression coefficient was  $0.08 \pm 0.02$  mmHg/mmolNa. Regression coefficients for ambulatory diastolic pressure and repeat measurements at 12 weeks were  $0.07 \pm 0.03$  and  $0.09 \pm 0.04$  mmHg/mmolNa respectively. We conclude that in our hypertensive patients, diastolic blood pressure is strongly related to urinary sodium excretion, which accounts for 27% of the variance. Reduction in salt intake may be worthwhile in this population.

