# Summary

Congenital heart disease refers to the structural or functional heart disease that is present at birth even if it is discovered later.

The incidence of congenital heart disease in Egypt was estimated to be 8-10/1000 live births.

Chronic hypoxemia in congenital cyanotic heart disease patient is a good stimulant for erythropoietin hormone which lead to highly increase in hemoglobin level, hematocrite value and red blood cell counting. As a compansatory erythrocytosis developed, erythropoietin titres then decreased.

This study was done to detect the erythropoietin titres in congenital heart disease wethere cyanotic or acyanotic Egyptian children and also detect plasma renin activity and aldosterone levels.

This work was carried on 19 children with congenital cyanotic heart disease, 12 children with congenital acyanotic heart disease and 16 apparent clinically and laboratory free children served as a control group. All patients were selected from the outpatient pediatric cardiology clinic of Benha university hospital. Their ages ranged from 2.5 to 14 years and the patients were not suffering from chest infection, heart failure, urinary troubles or other apperent congenital anomalies .

**Patients and control were subjected to the following :**

1- Carefull clinical history .

2- Thorough clinical examination.

3- Chest and heart x-ray.

4- Electrocardiogram.

5- Echocardiography.

6- Laboratory investigation.

a- Complete blood picture.

b- Hematocrite value.

c- Erythrocyte sedimentation rate.

d- Blood serum urea and serum creatinine levels.

e- Estimation of

plasma erythropoietin.

plasma renin activity.

plasma aldosterone.

Our results showed difference in the erythropoietin values which increased in both cyanotic and acyanotic heart disease patients when compared to the control group. This difference was significant due to the compensatory mechanisms of the patients to the hypoxemia.

On comparing the results of the cyanotic group with that of acyanotic and control groups, there was a significant statistical difference in the hemoglobin level, hematocrite value, red blood cell counting and

erythrocyte sedimentation rate between the cyanotic group as compared to both control and acyanotic groups.

There was no significant difference between the studied groups in plasma erythropoietin level, plasma renin activity and plasma aldosterone.

There was a positive correlation coeffecient between plasma erythropoietin and arterial blood pressure in the acyanotic heart disease patients.