

# LEVELS OF COENZYME Q10 IN SICKLE CELL PATIENTS

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## INTRODUCTION

Sickle-cell disease (SCD) is an autosomal recessive genetic blood disorder. Coenzyme Q10 is an oil-soluble, vitamin-like substance. The aim was to explore the possible role of coenzyme Q10 in improving the treatment and prognosis in sickle cell patient community. The first step towards this goal was to determine the levels of Coenzyme Q10 in sickle cell subjects.

## MATERIAL & METHOD

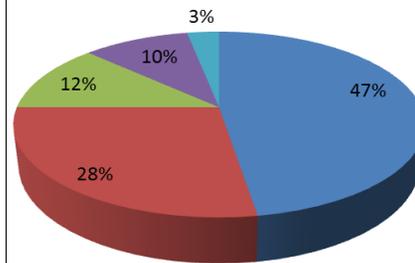
In this case controlled study of sickle cell disease patients and healthy matched controls, male and females were in 1:1 ratio. Both groups were submitted to data collection regarding age, sex, height, weight and average number of hospitalisations. Various haematological and physiological parameters were measured by:

- Sickling & solubility tests
- Hematocrit and
- HPLC for CoQ10 levels

Quantitative estimations of Coenzyme Q10 levels were done for both groups.

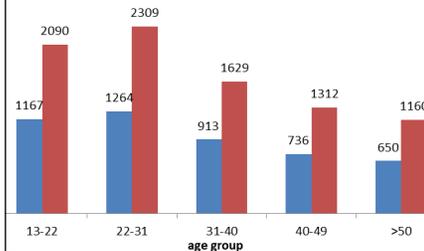
## RESULTS

Figure 1: Age distribution in percentage



For analysis purposes, the subjects were divided into five age groups : 13 to 22 years, 22 to 31 years, 31 to 40 years, 40 to 49 years 50 years and above.

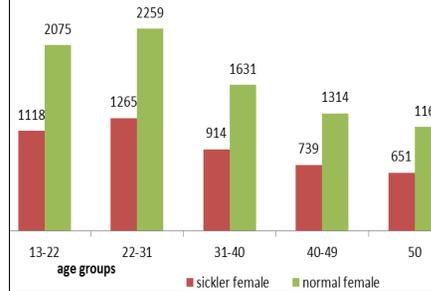
Figure 3: CoQ10 levels in human subjects with age



CoQ10 was lower in age group 13-22 by 44% , age group 22-31 by 45%.

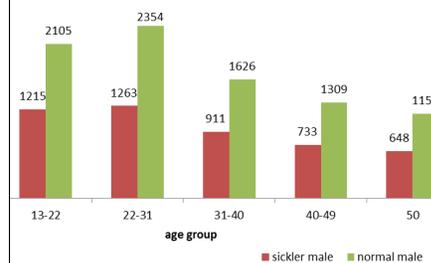
The CoQ10 levels were lower by 43% in age groups ranging 31- 40, 40- 49 and >50.

Figure 4: CoQ10 levels with age in females



The levels of CoQ10 were lower in age group 13-22 and 22-31 by around 45% in age groups 31- 40 , 40- 49 and >50 by about 42.5%.

Figure 5: CoQ10 levels with age in males



CoQ10 was lower in age group 13-22 by 42%

in age group 22-31 by 46%

in age group 31- 40 by 43%

in age group 40- 49 by 44%

in age group >50 by 43%.

## DISCUSSION

The data clearly indicates that BMI of sickle cell persons lie within the underweight category

The levels of CoQ10 reported in this study are in the range of 1160 ng/ml to 2309 ng/ml for normal Saudi subjects while that among sickle cell subjects lies within a range of 650-1264 ng/ml.

The levels of CoQ10 decreases with age. It was clearly evident in both males and females within each age subgroup, irrespective of being normal or sickle cell patient.

## CONCLUSION

We can conclude that preliminary results with CoQ10 in SCD are promising and like the beneficial effects of Coenzyme Q10 are observed in cardiovascular, cognitive or neurodegenerative disorders, this nutrient is likely to play positive role in

## BIOGRAPHY

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