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Correlations between Plasma Cortisol Levels and changes in Local Earth Magnetic Fields during Acute Myocardial Infarction

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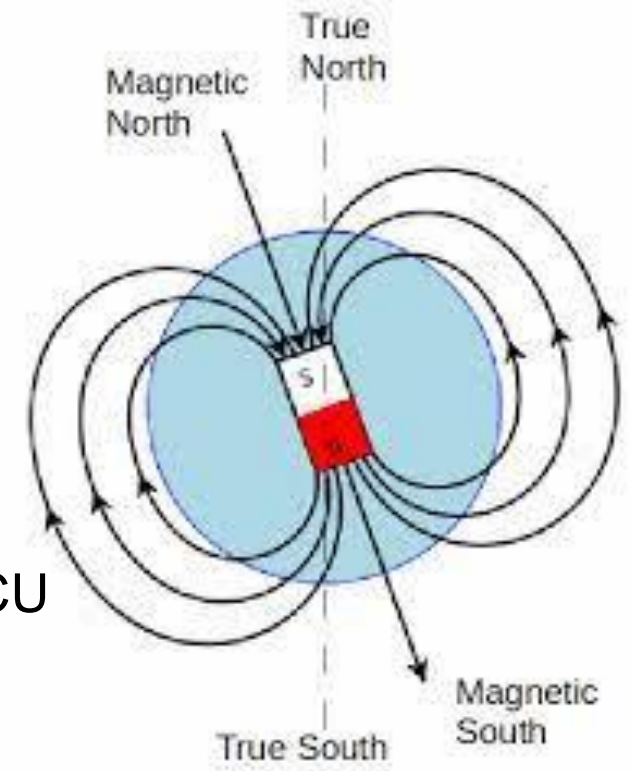
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The aim of the current study was to determine the correlation of local earth magnetic fields (LEMF) and cortisol levels in patients diagnosed with acute myocardial infarction (AMI).

Methods

- Prospective, observational study was conducted in the Lithuanian University of Health Sciences Kaunas Clinics, in Kaunas, Lithuania,
- All patients admitted between May 2017 and November 2017 to the CCU with a diagnosis of AMI.
- Total serum Cortisol levels were measured on admission in CCU.
- The LEMF was observed in five frequency intervals obtained from Schumann resonances : SDelta [0-3.5], STheta [3.5-7], SAlpha [7-15], SBeta [15-32], SGamma [32-65].
- The electromagnetic fields frequencies average during week days was assigned as [0-3.5], [3.5-7], [7-15], [15-32], [32-65], [0-65].
- The strength of the magnetic field is measured in two directions: north-south (NS) and east-west (EW) axis.



RESULTS

- 94 patients were included.
- Average of plasma cortisol level for patients admitted during the day time (5-12:59 hours) (n=37) showed no significant difference in comparison with patients admitted during the evening time (13-4:59 hours).

Correlation of studied LEMF frequency with plasma cortisol level for patients admitted during the day time.

LEMF frequency intervals [Hz]	LEMF frequency intervals average during a week	NS	EW
0-3.5 (Delta)	$r=0.526, p=0.001$	$r=0.48, p=0.003$	$r=0.458, p=0.004$
3.5-7 (Theta)	$*r=0.466, p=0.004$	$r=0.385, p=0.019$	$*r=0.327, p=0.048$
7-15 (Alpha)	$*r=0.396, p=0.015$	$r=0.257, p=0.125$	$r=0.185, p=0.273$
15-32 (Beta)	$r=0.391, p=0.017$	$r=0.307, p=0.065$	$r=0.158, p=0.352$
32-65 (Gamma)	$*r=-0.206, p=0.222$	$r=-0.238, p=0.156$	$r=-0.23, p=0.171$
0-65 (average)	$*r=0.334, p=0.043$	$r=0.243, p=0.147$	$r=0.151, p=0.372$

r- the Pearson correlation coefficient, *r – the Spearman correlation coefficient

CONCLUSION

Our study reveals a significant interdependence between plasma cortisol level for patients admitted during the morning time and LEMF Delta, theta frequencies in the NS and EW directions during AMI.