RESULTS

The baseline characteristics of the participants in our study are shown in **table (1).**There is no significant difference between males and females in MMSE &MoCA& IQ as shown in **table (2)**and the age is negatively correlated with MMSE & IQ &MoCAin all participants as shown in **table(3).**

Table (1) Characteristics of studied population

Criteria	Cases N=29	Controls N=29	P value
Age (Mean ± SD)	59.34±7.30	57.76±6.10	0.07
Gender Females Males	 14 (48.28%) 15 (51.72%)	 16 (55.17%) 13 (44.83%)	0.04
MMSE (Mean ± SD)	20.86±1.95	27.72±1.29	<0.0001
IQ (Mean ± SD)	73.62±9.42	95.79±5.72	<0.0001
MoCA (Mean ± SD)	21.28±2.55	27.14±0.94	<0.0001

Frequency	Site	Cases	Controls	P value

Table (2) The mean MMSE &MoCA& IQ

Criteria	Male	Female	P value
MMSE (Mean ± SD)	24.3 ±4.31	24.29±3.12	0.952
MoCA (Mean ± SD)	24.35±4.05	24.06±2.79	0.202
IQ (Mean ± SD)	84.73±16.04	84.56±10.26	0.861

Table(3) Correlation of age with cognitive functions in all subjects

character	MMSE		MoCA		IQ	
	Pearson's r	P value	Pearson's r	P value	Pearson's r	P value
age	-0.255	<0.0001	-0.213	<0.0001	-0.259	<0.0001

The mean electroencephalographic power values in cases and controls:

There is significant increase in theta (Θ) power in cases in relation to controls in all leads except T3&T4 as shown in **table(4)**

There is significant increase in alpha (α) power in controls in relation to cases in all leads as shown in **table(5).**

There is significant increase in beta (β) power in controls in relation to cases in some leads as shown in **table(6)**

There is significant increase in delta (δ) power in cases in relation to controls in most leads as shown in **table(7)**

Table (4)The mean electroencephalographic power values (theta Θ)

		Power value (mean ± SD)	Power value (mean ± SD)	
Θ Case (3.91-7.32) **Controls (4.64-7.32)** **All (3.91-7.32)**	**FP1**	22.07±1.81	12.45±5.74	<0.0001
	FP2	22.55±3.70	14.00±1.60	<0.0001
	F3	21.90±3.63	8.93±8.39	<0.0001
	F4	20.17±3.13	12.72±9.34	0.0001
	C3	22.66±5.88	7.41±5.67	<0.0001
	C4	16.34±3.17	9.28±5.98	<0.0001
	P3	16.93±4.86	8.55±6.31	<0.0001
	P4	17.27±1.46	7.58±8.38	<0.0001
	O1	16.72±2.58	10.79±9.21	<0.0001
	O2	14.31±3.14	7.76±5.58	<0.0001
	F7	16.41±3.79	13.34±8.25	0.04
	F8	16.90±2.04	12.58±7.65	0.005
	T3	16.93±3.59	11.72±8.40	0.13
	T4	13.76±0.99	11.24±8.21	0.11
	T5	17.09±1.07	10.34±1.13	<0.0001
	T6	18.55±1.38	9.93±5.71	<0.0001
	average	16.55±2.88	10.54±5.43	0.001

Table (5) The mean electroencephalographic power values (alpha α)

Frequency	Site	Cases Power value (mean ± SD)	Controls Power value (mean ± SD)	P value
α Case (8.06-11.23) **Controls (7.57-13.43)** **All (7.57-13.43)**	**FP1**	40.31±6.15	61.10±14.23	<0.0001
	FP2	42.90±6.03	51.48±10.24	0.0003
	F3	45.07±9.08	73.38±21.12	<0.0001
	F4	45.93±7.57	57.38±21.17	0.008
	C3	48.72±7.17	72.93±19.91	<0.0001
	C4	52.24±9.74	70.14±20.86	<0.0001
	P3	48.00±10.24	71.66±19.88	<0.0001
	P4	55.55±4.85	68.72±28.32	0.02
	O1	51.62±7.76	66±19.52	0.0005
	O2	53.93±6.79	72.03±21.20	0.0001
	F7	50.48±8.44	61.90±18.25	0.003
	F8	54.07±4.75	59.03±21.21	0.02
	T3	51.38±10.81	61.21±21.61	0.03
	T4	52.44±5.23	68±18.51	0.0001
	T5	49.21±8.68	68.24±17.49	<0.0001
	T6	53.45±4.11	67.55±21.19	0.0009
	Average	49.71±7.12	65.67±20.61	<0.0001

Table (6)The mean electroencephalographic power values (beta β)

Frequency	Site	Cases Power value (mean ± SD)	Controls Power value (mean ± SD)	P value
β Cases (13.92-18.07) Controls (13.92-19.78) All (13.92-19.78)	FP1	20.59±5.24	20.76±13.98	0.95
	FP2	18.68±4.19	27.79±9.63	0.1
	F3	19.41±5.93	14.62±13.13	0.08
	F4	18.44±3.24	25.48±18.78	0.07
	C3	14.79±1.21	16.00±14.71	0.66
	C4	17.66±4.87	15.20±14.36	0.39
	P3	17.55±6.51	16.55±14.38	0.05
	P4	17.28±2.53	20.66±4.73	0.048
	O1	17.24±1.99	17.90±15.50	0.02
	O2	20.93±4.50	17.13±14.97	0.02
	F7	18.79±5.51	20.34±15.27	0.61
	F8	18.34±3.06	23.97±20.47	0.15
	T3	19.21±5.63	22.38±18.96	0.39
	T4	22.17±3.06	16.93±13.06	0.04
	T5	16.55±2.16	17.58±15.17	0.72
	T6	16.76±3.75	17.38±14.28	0.82
	average	18.41±4.51	19.44±16.12	0.196

Table(7) The mean electroencephalographic power values (delta δ)

Frequency	Site	Cases Power value (mean ± SD)	Controls Power value (mean ± SD)	P value
delta δ cases (1.46-3.91) **Controls (1.46-3.91)** **All (1.46-3.91)**	**FP1**	9.41±1.40	5.52±2.89	0.001
	FP2	10.66±1.65	6.10±3.35	0.001
	F3	8.83±4.26	2.82±1.89	0.001
	F4	7.66±4.48	3.83±2.10	0.001
	C3	11.83±3.39	4.10±2.71	<0.0001
	C4	12.62±1.68	6.48±3.28	<0.0001
	P3	8.51±8.15	3.45±2.11	<0.0001
	P4	9.89±4.97	2.86±2.82	<0.0001
	O1	10.83±5.02	4.89±2.51	<0.0001
	O2	11.00±3.98	4.48±1.62	<0.0001
	F7	9.31±6.55	4.45±1.90	<0.0001
	F8	8.28±2.07	4.20±1.37	<0.0001
	T3	10.51±2.67	5.07±2.67	<0.0001
	T4	9.83±2.80	3.79±1.66	0.001
	T5	8.17±5.97	3.86±1.98	0.001
	T6	8.03±3.23	5.34±3.03	0.001
	average	7.26±2.85	4.85±2.75	0.001