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Mixed dry eye patients successfully treated by the innovative high-frequency electrotherapy device Rexon-Eye®

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Footnotes

Commercial Relationships **Alfredo Ruggeri**, Resono Ophthalmic (I), Resono Ophthalmic (P); **Eleonora Fatigati**, None; **Luca Vigo**, Resono Ophthalmic (C)

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Abstract

Purpose : We investigated the efficacy of an innovative treatment in a small cohort of nine patients affected by mixed dry eye disease (MDED), i.e., both aqueous deficient and evaporative type. The treatment consists in the administration of a specific low-power, high-frequency electric current using the Rexon-Eye® device.

Methods : Nine consecutive MDED patients were recruited and all treated. Therapy was administered with the Rexon-Eye® device (Resono Ophthalmic, Sandrigo, Italy, patented), which applies a low-power electric current with a specific spectrum of frequencies (4-64 MHz, Quantum Molecular Resonance, QMR®, patented). Patients were administered one 20 min treatment per week, for 4 weeks, and were examined at baseline and two month after the last treatment, by measuring: lipid layer thickness, tear meniscus, and non-invasive tear break-up time (NIBUT), all measured with IDRA (SBM Sistemi, Turin, Italy); Ocular Surface Disease Index (OSDI) score; tear osmolarity (TearLab, Escondido (CA), USA); ocular inflammation (InflammaDry; Quidel, San Diego (CA), USA).

Results : Results are reported in Table 1 and 2. The clinical endpoints improved significantly in most of the patients and no adverse events nor side effects were observed in any of them.

Conclusions : The innovative therapeutic device Rexon-Eye®, based on the QMR® patented electric stimulation, proved to be very effective in improving subjective and objective ocular parameters in most of the mixed dry eye patients of this study.

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Pat nr.	Sex	Age	Eye	Lipid layer pre	Lipid layer post		Tear meniscus pre	Tear meniscus post		NIBUT pre	NIBUT post	
1	F	48	OD	15	80	++	0,15	0,22	47%	16,1	15,9	-1%
			OS	30	30-80	+	0,23	0,21	-9%	15,5	16,0	3%
2	F	48	OD	30	30-80	+	0,26	0,22	-15%	7,7	13,5	75%
			OS	30-80	80-120	++	0,26	0,21	-19%	13,2	14,0	6%
3	F	47	OD	30-80	30-80	=	0,10	0,22	120%	12,0	12,6	5%
			OS	15	80-120	+++	0,13	0,17	31%	13,1	13,4	2%
4	M	51	OD	30-80	30-80	=	0,13	0,09	-31%	4,0	7,6	90%
			OS	30-80	30-80	=	0,08	0,11	38%	4,5	8,2	82%
5	F	44	OD	30	80-120	++	0,06	0,16	167%	5,1	8,1	59%
			OS	30	30-80	+	0,10	0,18	80%	7,6	12,4	63%
6	F	65	OD	30-80	30-80	=	0,08	0,16	100%	3,7	11,9	220%
			OS	30-80	30-80	=	0,12	0,17	42%	4,0	12,8	220%
7	F	36	OD	30-80	55	=	0,14	0,20	43%	6,7	7,1	6%
			OS	80-120	81	=	0,15	0,25	67%	8,6	9,3	8%
8	M	52	OD	30-80	30	=	0,13	0,15	15%	4,0	4,6	15%
			OS	30-80	30	=	0,08	0,11	38%	4,5	6,0	33%
9	F	50	OD	80-120	30	-				8,7	5,8	-33%
			OS	80-120	30	-				4,6	6,0	30%

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Table 1.

Pat nr.	Sex	Age	Eye	OSDI pre	OSDI post		Osmolarity pre	Osmolarity post		Inflammadry pre	Inflammadry post	
1	F	48	OD	52	44	-15%	292	290	-1%	pos	neg	+
			OS	52	44	-15%	284	295	4%	pos	neg	+
2	F	48	OD	52	48	-8%	286	286	0%	neg	neg	=
			OS	52	48	-8%	280	278	-1%	neg	neg	=
3	F	47	OD	31	30	-3%	285	304	7%	pos	pos	=
			OS	31	30	-3%	292	301	3%	pos	pos	=
4	M	51	OD	64	77	20%	311	302	-3%	pos	pos	=
			OS	64	77	20%	314	296	-6%	pos	pos	=
5	F	44	OD	58	25	-57%	294	290	-1%	pos	neg	+
			OS	58	25	-57%	299	298	0%	pos	neg	+
6	F	65	OD	62	22	-65%	293	301	3%	neg	neg	=
			OS	62	22	-65%	294	303	3%	neg	neg	=
7	F	36	OD	29	38	31%	305	302	-1%	neg	neg	=
			OS	29	38	31%	300	399	33%	neg	neg	=
8	M	52	OD	64	73	14%	311	301	-3%	pos	neg	+
			OS	64	73	14%	314	307	-2%	pos	neg	+
9	F	67	OD				320	302	-6%	neg	neg	=
			OS				315	301	-4%	neg	neg	=

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Table 2.