

THE EFFECTS OF A BEHAVIORAL INTERVENTION IN PERCUTANEOUS CORONARY INTERVENTION PATIENTS

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DISEASES ASSOCIATED WITH HYPER- AND HYPO-ACTIVITY OF THE HPA-AXIS

HYPER-ACTIVITY

DURING STRESS
MELANCHOLIC DEPRESSION
CUSHING SYNDROME

INCREASED CORTISOL

SUPPRESSES INFLAMMATION
(Chrousos, NEJM, 1995)

HYPO-ACTIVITY

AFTER STRESS
ATYPICAL DEPRESSION
CHRONIC FATIGUE
FIBROMYALGIA

DECREASED CORTISOL

ACTIVATES INFLAMMATION

CHARACTERISTICS OF EXHAUSTED SUBJECTS

LOWER LEVEL OF ACTH

LOWER LEVEL OF CORTISOL

ELEVATED LEVEL OF INFLAMMATION (IL-1 β ; IL-6; TNF- α)

HYPOTHESIS

**A BEHAVIORAL INTERVENTION AIMED AT THE
REDUCTION OF EXHAUSTION IN CORONARY
PATIENTS REDUCES INFLAMMATION**

EXHAUSTION INTERVENTION TRIAL

**INCLUSION: PATIENTS WHO FELT EXHAUSTED AFTER PCI
AGE 35–68**

**EXCLUSION: SEVERE SOMATIC OR MENTAL COMORBIDITY
HISTORY OF MAJOR DEPRESSION \geq 3 YEAR
SOMATIZATION DISORDER
UNSUCCESSFUL TREATMENT FOR A
RECENT DEPRESSION OR PANIC DISORDER**

TREATMENT

GROUP THERAPY

- TO REDUCE STRESSORS LEADING TO EXHAUSTION
- TO SUPPORT RECOVERY BY PROMOTING REST AND MAKING REST MORE EFFICIENT

IMMUNOLOGICAL SUBSTUDY

INTERVENTION GROUP
CONTROL GROUP

N = 83
N = 87

INFLAMMATORY MARKERS

NEOPTERIN
IL-1ra
IL-6
TNF- α
CRP

ELEVATED INFLAMMATION

SCORE IN THE UPPER QUARTILE AT BASELINE

PATIENTS (%) WITH ELEVATED LEVELS OF NEOPTERIN

	INTERVENTION	CONTROL
N	83	87
BASELINE	27%	24%
6 MONTHS	13%	21%
18 MONTHS	10%	21%

CONCLUSION NEOPTERIN

**THE INTERVENTION REDUCED THE RISK OF ELEVATED
NEOPTERIN BY 66%
(OR = 0.34; 95%CI .15-.78; p = 0.01)**

PATIENTS (%) WITH ELEVATED LEVELS OF IL-1ra

	INTERVENTION	CONTROL
N	82	87
BASELINE	22%	25%
6 MONTHS	22%	30%
18 MONTHS	20%	34%

CONCLUSION IL-1ra

THE INTERVENTION EFFECT WAS MODIFIED BY THE PRESENCE OF AN INFLAMMATORY CONDITION

PRESENT: NO EFFECT

**ABSENT: REDUCED RISK OF ELEVATED IL-1ra BY 70%
(OR = 0.30; 95%CI .13 -.72; p < 0.01)**

PATIENTS (%) WITH ELEVATED LEVELS OF IL-6

STATISTICAL EVALUATION IMPOSSIBLE DUE TO:

- **HIGH DROP OUT RATE (84%) OF PATIENTS WITH ELEVATED IL-6 AT BASELINE**

PATIENTS (%) WITH ELEVATED LEVELS OF CRP

	INTERVENTION	CONTROL
N	83	88
BASELINE	33%	30%
6 MONTHS	34%	27%
18 MONTHS	31%	36%

CONCLUSION CRP

**THE INTERVENTION DID NOT REDUCE THE RISK OF
ELEVATED CRP**

(OR = 0.67; 95% CI .32-1.41; P = 0.29)

PATIENTS (%) WITH ELEVATED LEVELS OF TNF- α

	INTERVENTION	CONTROL
N	83	88
BASELINE	23%	35%
6 MONTHS	25%	38%
18 MONTHS	25%	31%

CONCLUSION TNF- α

**THE INTERVENTION DID NOT REDUCE THE RISK OF
ELEVATED TNF- α
(OR = 1.17; 95% CI .56-2.42;p= 0.68)**

MONOCYTE-MACROPHAGE ACTIVATION

- **NEOPTERIN AND IL-1ra ARE MARKERS OF MONOCYTE-MACROPHAGE ACTIVATION**
- **THE INTERVENTION HAD A BENEFICIAL EFFECT ON THE INFLAMMATORY RESPONSE**

CHRONIC INFLAMMATION

CHRONIC INFLAMMATORY CONDITIONS LIMIT THE EFFECT OF A BEHAVIORAL INTERVENTION ON:

- **PSYCHOLOGICAL FACTORS**
- **CARDIOLOGICAL FACTORS**
- **IMMUNOLOGICAL FACTORS**

FINAL CONCLUSION

A BEHAVIORAL INTERVENTION AIMED AT THE REDUCTION OF A STATE THAT ACTIVATES INFLAMMATION CONTRIBUTES TO THE CONTROL OF THE INFLAMMATORY RESPONSE