



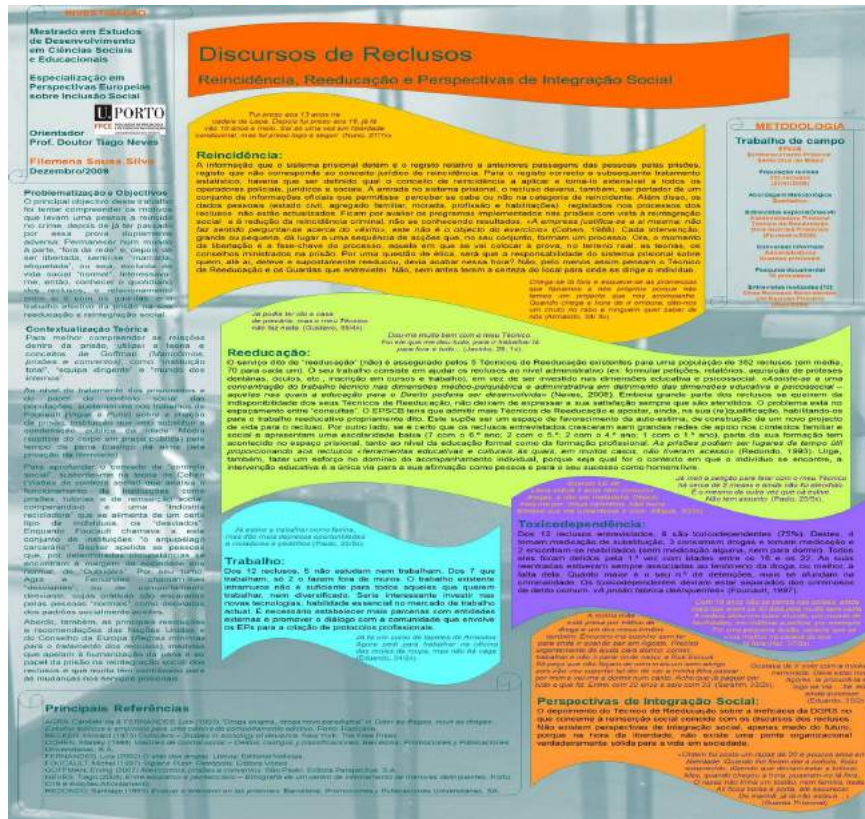
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PÔSTER RECOMENDÁVEL

Fibromyalgia Type I and Type II : Profiling distinct subgroups using the Fibromyalgia Impact Questionnaire (FIQ)

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Introduction

Fibromyalgia (FM) is a chronic pain syndrome most frequently present in women. It is characterized by chronic widespread pain, comorbid tender points, and is usually associated with sleep disturbances, fatigue, visceral pain and depression.

The complex clinical profile observed among Fibromyalgia patients indicates that Fibromyalgia is not a homogeneous disorder. Variability in the intensity of FM-related symptoms, including differences in psychological functioning (Turk et al. 1998; Geiseler et al. 2003), altered cardiovascular reactivity (Kaschitz et al. 2001), and disturbed pain perception (Gruen-Halisch et al. 2000; Hwang et al. 2001; Giesecke et al. 2003) clearly demonstrates this heterogeneity.

Objective

We used the Fibromyalgia Impact Questionnaire (FIQ) to identify subtypes of FM patients. The FIQ is an brief questionnaire to use for cluster formation because it is quickly administered and easily assesses a large number of different FM-related clinical characteristics.

In this study, we also assessed how the different FM subgroups differed in response to experimental pain, psychosocial functioning and demographic profile. Our objective, therefore, was to describe the factors that might be expensive in predicting symptom differences in FM.

Methods

Sixty-one women diagnosed with FM participated in this study.

FM subgroups were created by applying a hierarchical cluster analysis on selected items of the FIQ.
Classification variables: pain, fatigue, morning tiredness, stiffness, anxiety and depression.

We also tested for group differences (MANOVA).

(1) Experimental pain: pressure pain threshold at tender points, the strength of descending pain/inhibition, and pain intensity ratings recorded during the arm immersion test.

(2) Psychosocial functioning: mean catastrophizing on the PCS, pain related interference on daily living, perception of life control, support from significant others, the Mental Component Summary and the Physical Component Summary on the SF-36.

(3) Demographic characteristics: years since symptom onset, years with FM diagnosis, work status, and presence or absence of an identified trigger event.

Results

1. Descriptive analysis

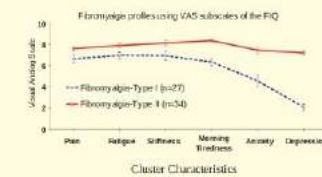
Participant Characteristics

Demographic Data and Questionnaire Scores	Mean (SD)
Age (yr)	49.7 (2.8)
Years with symptoms of chronic pain	12.0 (6.7)
Years with Fibromyalgia diagnosis	10.0 (5.3)
Reported on subjects working (full or part-time)	40%
Reported on subjects living with a partner	58%
Reported on subjects with university degree	33%
Reported on subjects with diagnosed FM	94%
Average pressure pain threshold at tender points	6.30 (0.41)
Endogenous Nitric Oxide (in percentage)	17.3 (6.7)

FIQ	Mean (SD)
Pain	72.0 (3.8)
Fatigue	75.0 (3.3)
Morning tiredness	75.0 (3.8)
Stiffness	75.0 (3.8)
Anxiety	62.0 (3.9)
Depression	36.0 (3.5)
Mental Component Summary (SF-36)	38.0 (3.2)
Physical Component Summary (SF-36)	30.0 (3.9)

FIQ = Fibromyalgia Impact Questionnaire; SF-36 = Short-Form 36; PCS = Physical Component Summary; MCS = Mental Component Summary; SD = Standard Deviation; Mean = Average.

2. Cluster analysis



FIQ subscales	Cluster analysis		Cluster analysis	
	Type I (n=27)	Type II (n=34)	Type I (n=27)	Type II (n=34)
Pain	72.0 (3.8)	75.0 (3.3)	6.30 (0.41)	6.30 (0.41)
Fatigue	75.0 (3.3)	75.0 (3.8)	6.30 (0.41)	6.30 (0.41)
Stiffness	75.0 (3.8)	75.0 (3.8)	6.30 (0.41)	6.30 (0.41)
Morning tiredness	75.0 (3.8)	75.0 (3.8)	6.30 (0.41)	6.30 (0.41)
Anxiety	62.0 (3.9)	62.0 (3.9)	6.30 (0.41)	6.30 (0.41)
Depression	36.0 (3.5)	36.0 (3.5)	6.30 (0.41)	6.30 (0.41)

3. Multivariate analysis of variance (MANOVA)

Univariate Analysis of Descriptive Data				Multivariate Analysis of Experimental Pain				Multivariate Analysis of Psychosocial Data			
Variable	Type I (n=27)	Type II (n=34)	p-value	Variable	Type I (n=27)	Type II (n=34)	p-value	Variable	Type I (n=27)	Type II (n=34)	p-value
Age (yr)	49.7 (2.8)	49.7 (2.8)	p=0.71	Pressure pain threshold (mmHg)	6.30 (0.41)	6.30 (0.41)	p=0.81	PCS	38.0 (3.2)	38.0 (3.2)	p=0.81
Years with symptoms of chronic pain	12.0 (6.7)	12.0 (6.7)	p=0.81	Endogenous Nitric Oxide (%)	17.3 (6.7)	17.3 (6.7)	p=0.81	Physical Component Summary (SF-36)	30.0 (3.9)	30.0 (3.9)	p=0.81
Years with Fibromyalgia	10.0 (5.3)	10.0 (5.3)	p=0.81	Stiffness	75.0 (3.8)	75.0 (3.8)	p=0.81	Mental Component Summary (SF-36)	38.0 (3.2)	38.0 (3.2)	p=0.81
Reported on subjects working (full or part-time)	40%	40%	p=0.81	Depression	36.0 (3.5)	36.0 (3.5)	p=0.81				
Reported on subjects with university degree	33%	33%	p=0.81								

Discussion

Forty-four percent of patients in our sample belonged to FM-Type I. Patients in this cluster reported high levels of pain, fatigue and stiffness, but significantly lower levels of morning tiredness, anxiety and depression.

Patients in FM-Type II reported high levels of pain, fatigue, stiffness, morning tiredness, anxiety and depression. Differences between the two FM subgroups were driven, therefore, by differences in psychological distress (including anxiety and depression) and morning fatigue.

Even if the levels of depression and anxiety of patients from FM-Type I were low and comparable to those typically found among healthy women (Marques et al. 2005), it is important to keep in mind that patients in FM-Type I continued to meet the diagnostic criteria for PM.

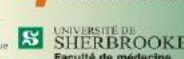
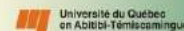
The confirmation that neurophysiological changes underlie the development of FM is provided by evidence that all Fibromyalgia patients have a deficient DNIC response (see previous published data Julien et al. 2005). Moreover, when compared to the scores typically obtained among healthy subjects, tender point thresholds (Rosen et al. 1996) were much lower and cold pain ratings (Julien et al. 2005) were much higher for both FM subtypes.

Conclusion and Key message

•Fibromyalgia subgroups differ by severity of depression, anxiety and morning fatigue

•Both fibromyalgia subgroups report pain processing abnormalities (hyperalgesia, allodynia, disturbed endogenous pain modulating systems) and sleep disturbances

•Fibromyalgia subgroups may respond differently to pharmacological treatments.



PÔSTER RECOMENDÁVEL



IMMUNOLocalIZATION OF THE INTERLEUKIN-4 RECEPTOR ALPHA CHAIN IN OCULAR TISSUES DURING POSTNATAL STAGES

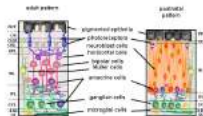
Silva, A. G. L. S. da, Linden, R. e Sholl-Franco, A.

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INTRODUCTION

The interleukin-4 receptor alpha chain (IL-4R α) is only one of the several cytokine-binding polypeptides that constitute the IL-4 receptor complex, the composition of which varies in a cell-type specific fashion. The IL-4R α chain binds IL-4 with high affinity, leading to dimerization with another receptor protein to form either a type I or type II receptors. In nonhemopoietic cells, the type II receptor is formed by heterodimers of IL-4R α with IL-13R α , instead of IL-2R β that forms the type I receptor. The aim of this study was to investigate whether the IL-4R α chain is expressed in the development of rodent ocular tissues, in particular in the neonatal retina.

POSTNATAL RETINA DEVELOPMENT AND STRUCTURE



MATERIALS AND METHODS

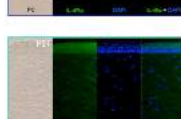
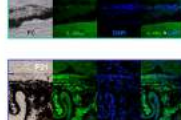
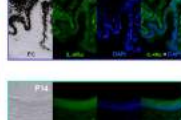
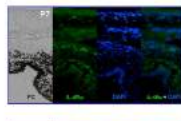
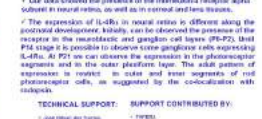
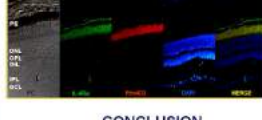
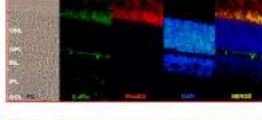
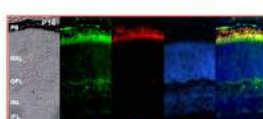
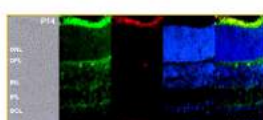
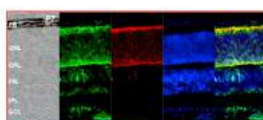
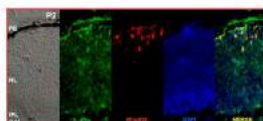
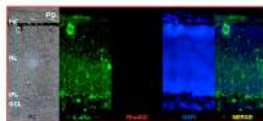


ABSTRACT

RESUMO: O receptor α da interleucina-4 (IL-4R α) é apenas uma das várias cadeias polipeptídicas que constituem o complexo do receptor de IL-4, cuja composição varia de maneira específica de tipo celular. A cadeia IL-4R α se liga à IL-4 com alta afinidade, levando à dimerização com outra proteína receptora para formar o receptor de tipo I ou de tipo II. Em células não hemopoéticas, o receptor de tipo II é formado por heterodímeros de IL-4R α com IL-13R α , em vez de IL-2R β que forma o receptor de tipo I. O objetivo deste estudo foi investigar se a cadeia IL-4R α é expressa nos tecidos oculares de roedores durante o desenvolvimento, em particular na retina neonatal.

ABSTRACT: The interleukin-4 receptor alpha chain (IL-4R α) is only one of the several cytokine-binding polypeptides that constitute the IL-4 receptor complex, the composition of which varies in a cell-type specific fashion. The IL-4R α chain binds IL-4 with high affinity, leading to dimerization with another receptor protein to form either a type I or type II receptors. In nonhemopoietic cells, the type II receptor is formed by heterodimers of IL-4R α with IL-13R α , instead of IL-2R β that forms the type I receptor. The aim of this study was to investigate whether the IL-4R α chain is expressed in the development of rodent ocular tissues, in particular in the neonatal retina.

KEYWORDS: Interleukin-4 receptor alpha chain, postnatal development, rodent ocular tissues, immunohistochemistry, IL-4R α .



CONCLUSION

- Our data showed the presence of the interleukin-4 receptor alpha chain in neonatal retina, as well as in corneal and lens tissues.
- The expression of IL-4R α in neonatal retina is different along the postnatal development. Actually, can be observed the presence of the receptor in the neuroblastic and ganglion cell layers (P0-P2), until P14 stage it is possible to observe some ganglion cells expressing IL-4R α . At P21 we can observe the expression in the photoreceptor segments and in the outer plexiform layer. The adult pattern of expression is restricted to nuclei and basal segments of rod photoreceptor cells, as suggested by the co-localization with rhodopsin.

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 - José Antônio dos Santos
 - José Francisco de Moraes
 - Sérgio de Melo Pereira
 - Tereza
 - Jéssica

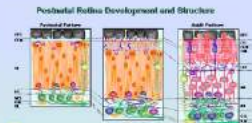
SIGNALING PATHWAYS RELATED TO INTERLEUKIN-2 NEUROPROTECTIVE EFFECT UPON RETINAL GANGLION CELLS *IN VITRO*



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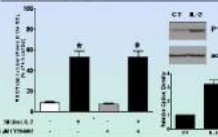
Fragmented cell death is a phenomenon associated with both neural development and pathological conditions. During normal neural development, cell death affects a variety of cell populations, including neural progenitor cells (NPCs). On the other hand, cell death occurs in specific neuronal types from birth to promote NPC differentiation. During the development of the nervous system, proliferation of the neural progenitor cells is regulated by a number of factors, including growth factors (e.g., bFGF, retinoic acid and neurotrophins) and cell-to-cell molecular signals (e.g., Notch and Wnt signaling). The aim of this study was to investigate a role for the microtubule effect of the intermediate filament-associated protein (IFAP) in the microtubule organizing pathways related to the morphogenesis of the NPC. Specifically, we investigated the correlation between the expression of *h-2* and the expression of IFAP in NPC.



EPF, ectoplasmic fold; EPL, ectoplasmic layer; EL, endoplasmic layer; EP, endoplasmic fold; ER, endoplasmic layer; EFL, endoplasmic fold; EL, ectoplasmic layer; EPF, ectoplasmic fold; EP, endoplasmic layer.

Group	ROS-TM6 number of cells in the OSL (% of control)
Control	~18
OSL	~85*
OSL + 100 μ g/kg	~10#
OSL + 100 μ g/kg + 100 μ g/kg	~55**

Marker	Control (n=10)	100% Oocyte (n=10)
30 cell Genescreen	0.95 ± 0.02	0.75 ± 0.01*
100% Oocyte (inhibitor 1)	0.92 ± 0.03	0.92 ± 0.03
100% PFS	0.83 ± 0.04	0.70 ± 0.03
3.75 µM CHC2	0.00 ± 0.00	0.00 ± 0.00
100% PFS	0.70 ± 0.01	0.00 ± 0.00
3.75 µM CHC2	0.00 ± 0.00	0.00 ± 0.00
100% PFS	0.70 ± 0.01	0.00 ± 0.00



Condition	S/G2/M PHASE OF CELL IN THE CELL CYCLE (% of 4h control)
50 U/ml IL-2 (-), 50 nM PGE2 (-)	~10
50 U/ml IL-2 (+), 50 nM PGE2 (-)	~55*
50 U/ml IL-2 (-), 50 nM PGE2 (+)	~10
50 U/ml IL-2 (+), 50 nM PGE2 (+)	~10

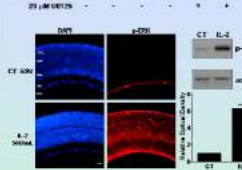


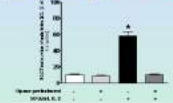
Figure 2 shows the effect of R-2 on the expression of SOX2 and Akt2 in H1299 cells. The figure includes Western blots, bar graphs, and a schematic diagram.

Western Blots: The top panel shows Western blots for SOX2 and Akt2 in H1299 cells treated with R-2 (0, 25, 50, 100 μ M). The bottom panel shows Western blots for SOX2 and Akt2 in H1299 cells treated with R-2 (0, 25, 50, 100 μ M) and LY294002 (LY) (0, 10, 20, 40 μ M).

Relative Optical Density (SOX2): The bar graph shows the relative optical density of SOX2 in H1299 cells treated with R-2 (0, 25, 50, 100 μ M). The density increases with R-2 concentration.

Relative Optical Density (Akt2): The bar graph shows the relative optical density of Akt2 in H1299 cells treated with R-2 (0, 25, 50, 100 μ M). The density increases with R-2 concentration.

Effect of R-2 on the SOX2/Akt2 Pathway: The schematic diagram shows the effect of R-2 on the SOX2/Akt2 pathway. R-2 inhibits the phosphorylation of Akt2, which in turn inhibits the transcription of SOX2.



Our data demonstrate that 4, 3 provides a long-term (2 and 5 days) neuroprotective effect equivalent to DC in a rat stroke model, and this effect is related to greater blood and CBG17 affinity. Moreover, the early presence of HS was essential for 11-2 action.



Abstract. Programmed and acute α -glutamine-induced rats (AGIRs) showing general and peripheral modifications. During stress, neural development, cell death, chronic cell populations, including neural ganglia cells (NGC). On the other hand, changes such as gene abnormalities have been shown to provide NGC depressive. The development of the nervous system produces, survival and differentiation of cells are altered by different temporal and spatial processes of apoptosis (e.g. axonotic neurotrophins) and of cellular death (e.g. neurotrophins). The study was to investigate in AGIRs if the neurotrophic effect of anabolic (1,25) (analogous NGC) in the correlation between the neurotrophic effect of 1,25 and the release (10%) of genes of depressive. (a) the intracellular signaling pathway (e.g. NGC).

Microbiology. *Monitors* cells were quantified by light-scattering and retained in polyethylene bottles (16) in their aqueous collection for radiographic staining of PGC. After 2 retinal explants were obtained and maintained with an additional 20 µl (2.5%) of 10% formalin, specific pharmacological inhibitors for 2 or 6 days in vitro (DVT). The total number of nuclei stained with (DAPI) in the ganglion cell layer and the specific number of PGC.

Results: The results showed that 50 U/ml IL-2 treatment blocks actinomycin-induced RBC (2 tHR: 40–45) \pm 3.03, 3 tHR (30–35) \pm 0.37, and also efflux involves tyrosine kinase, JF 159612 activity. IL-2 treatment also increased the 102 expression in all selected ligands. The treatment with heparinase completely blocked the effect of IL-2 on the survival of RBC (20).

transcription. Our data demonstrate that E-2 promotes a long-term (2 wk) and nonreversible effect upon downstream MHC in a stress-dependent manner, and this is related to known genes, *AP-1*, and *GRN1* activity. Moreover, the early presence of R is essential for E-2 action.