The 2nd International Conference on Controversies in Neuropathic Pain

Pregabalin but not Ziconotide Reverses Hypersensibility in Experimental Herpetic Neuralgia Induced by HSV-1 Infection in C57bl/6 Mice

Heloísa Alonso Matielo [a], Erika Paula Machado Peixoto [b], Cláudio Romero Farias Marinho [b], Gerald Zamponi [c], Thiago Mattar Cunha [d], Camila S Dale[a]. [a]Department of Anatomy, ICB/USP– São Paulo, SP; [b]Department of Parasitology, ICB/USP - São Paulo, SP. [c] Department of Physiology and Pharmacology, University of Calgary, Calgary, AB, Canada; [d]Faculty of Medicine of Ribeirão Preto da USP– São Paulo, SP.
email: heloisa.matielo@usp.br/camila.dale@usp.br

INTRODUCTION AND AIMS

Herpetic neuralgia (HN) and Post-herpetic neuralgia (PHN)

- **Acute:** up to 3 weeks after rash
- **Subacute:** 3 months<pain> 3 weeks
- **Post-herpetic:** pain >3 meses

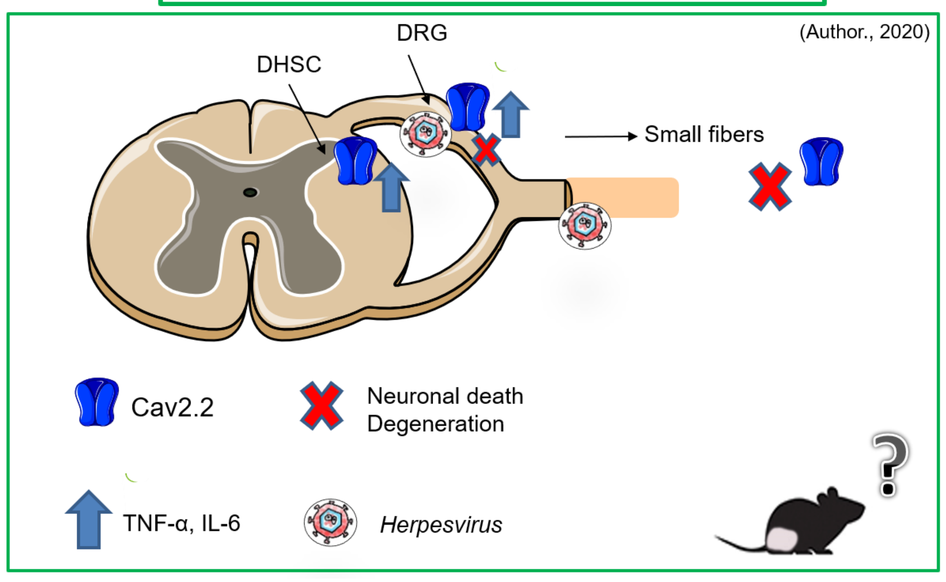

Figure 1. Mechanisms associated with HN and PHN.

AIMS: To evaluate the development of NH and NPH in mice and the picture of mechanical and thermal hypersensitivity.

METHODOLOGY

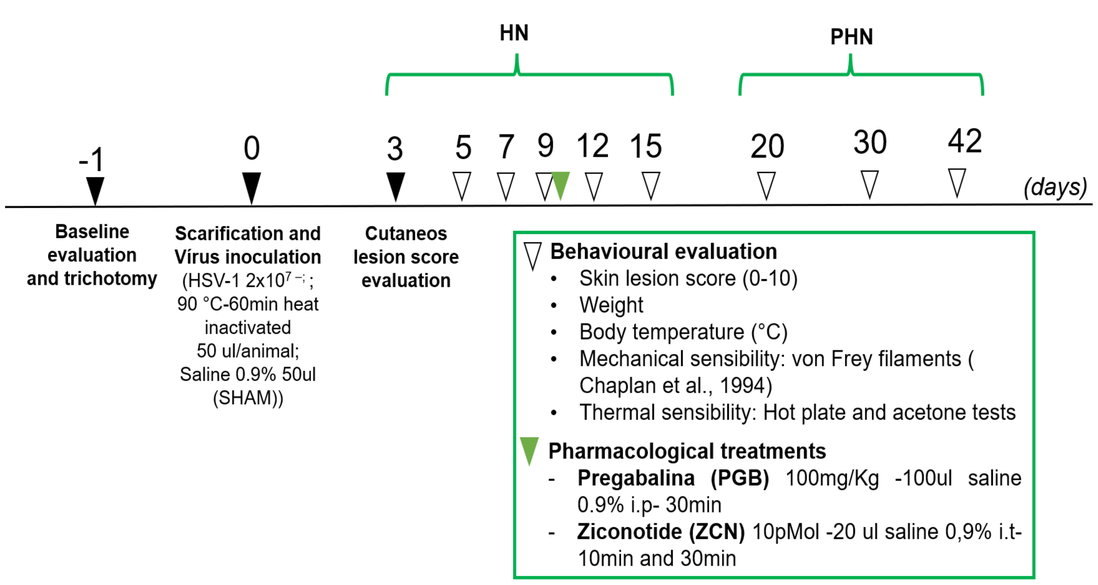

Figure 2. Experimental design and pharmacological treatments

Conclusions

We demonstrate the development of mechanical and thermal hyper and hyposensitivity in HN mice, which were reversed by pregabalin treatment, suggesting its analgesic potential for acute stages of HN.

RESULTS AND DISCUSSION

1. Animals have weight gain and temperature increase, and HSV-1 mice develops skin lesions, mechanical and thermal hyper and hyposensibility during HN.

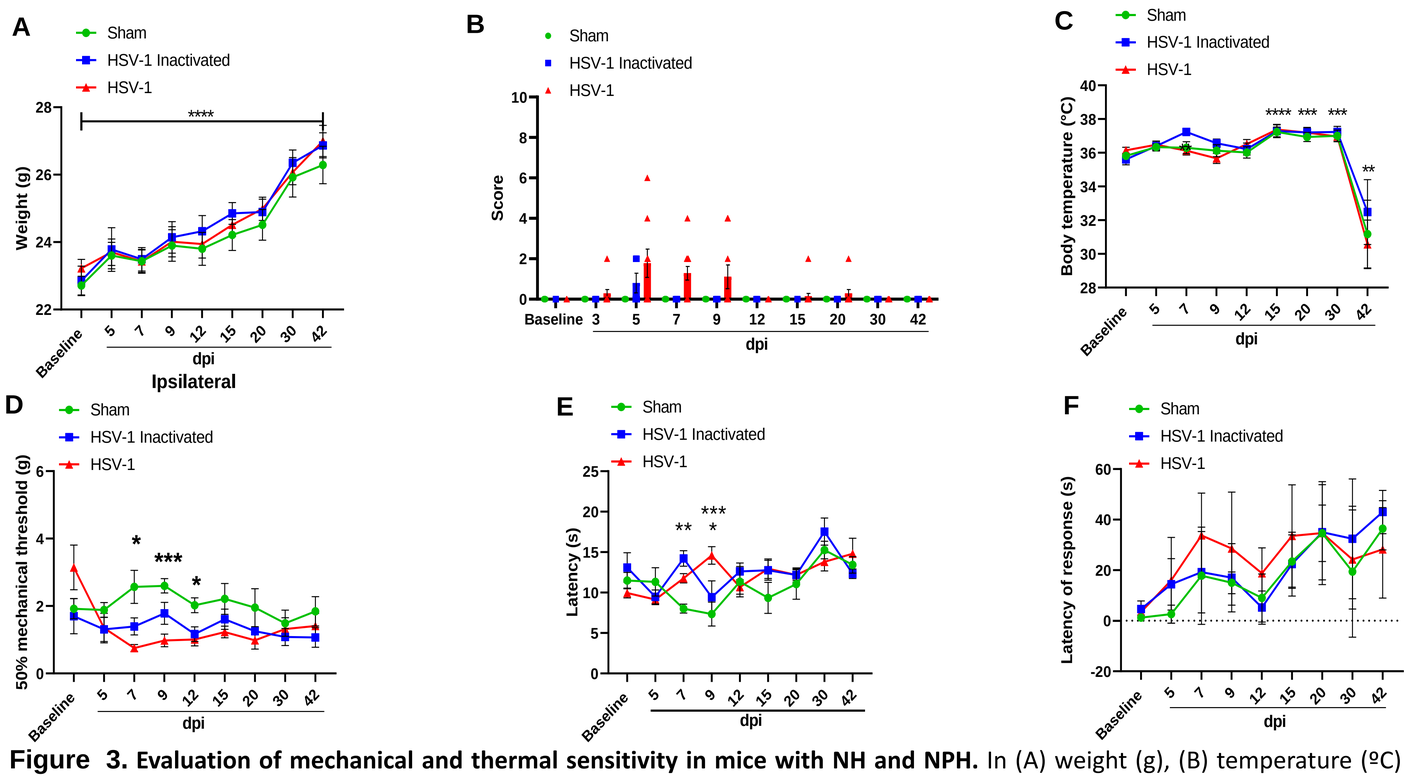

Figure 3. Evaluation of mechanical and thermal sensitivity in mice with NH and NPH. In (A) weight (g), (B) temperature (ºC) and in (C) skin lesion score evaluated in HSV-1 animals (n=9-14); Inactivated HSV-1 (n=5-10) or Sham (n=5-10), in NH (3 to 15 dpi) and NPH (20 to-42 dpi) phases, with a score of 0, 2, 4, 6 , 8 and 10 according to the appearance and degree of zoster-type lesions. Mechanical and thermal sensitivity were evaluated at 3, 5,7,9,12,15,20,30 and 42 days after inoculation (dpi). Data presented as mean ±e.p.m. and evaluated by two-way ANOVA followed by Bonferroni post-test. In (A) ****p<0.0001 Basal vs 42 dpi; in (B)****P<0.0001; basal vs 15dpi***p=0.0006 basal vs 20dpi;***p=0.0008 basal vs 30dpi;**p=0.0031basal vs 42 dpi. In (D) *p=0.0145 Sham vs HSV-1 7dpi; ***p=0.0006 Sham vs Hsv-1 9dpi; *p=0.0185 Sham vs HSV-1 12 dpi; in (E)**p=0.0059 Sham vs Inativado;*p=0.0102 HSV-1 vs HSV-1 Inativado;***p=0.002 Sham vs HSV-1.

2. Treatment with pregabalin but not ziconotide reversed mechanical hypersensibility after 9dpi without affect locomotion.

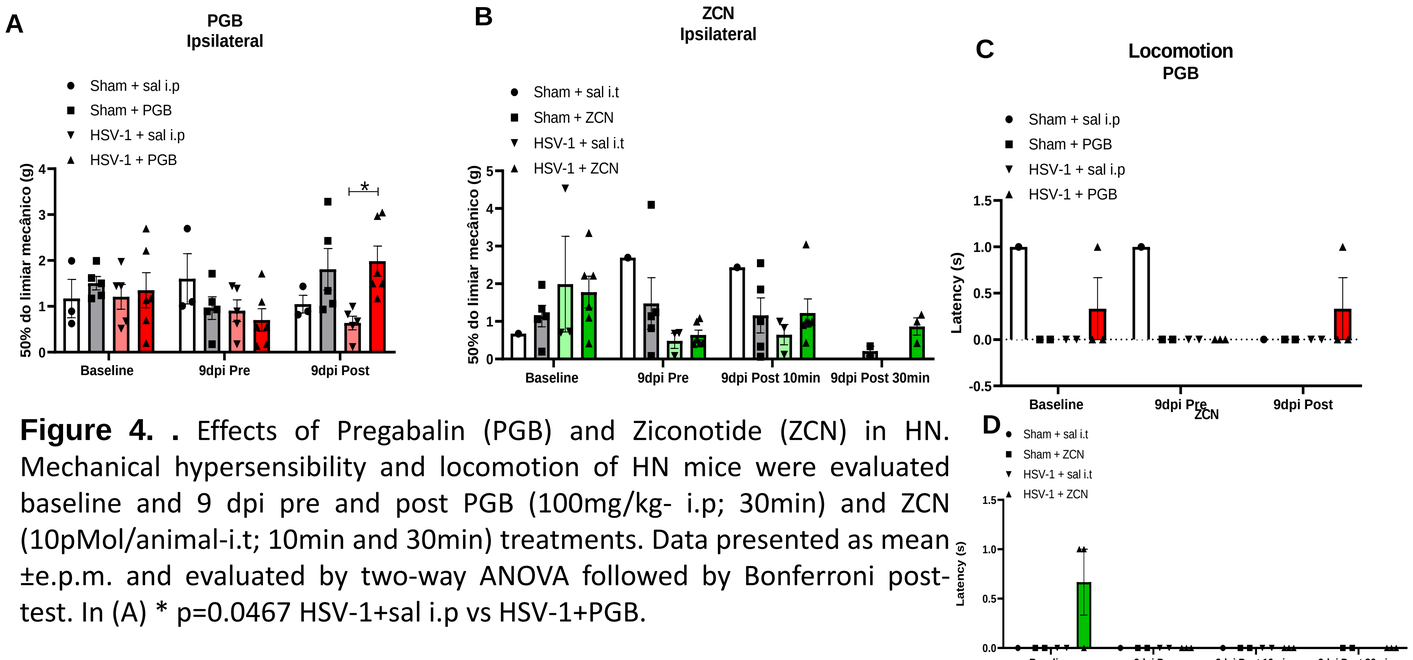

Figure 4. . Effects of Pregabalin (PGB) and Ziconotide (ZCN) in HN. Mechanical hypersensibility and locomotion of HN mice were evaluated baseline and 9 dpi pre and post PGB (100mg/kg- i.p; 30min) and ZCN (10pMol/animal-i.t; 10min and 30min) treatments. Data presented as mean ±e.p.m. and evaluated by two-way ANOVA followed by Bonferroni post-test. In (A) * p=0.0467 HSV-1+sal i.p vs HSV-1+PGB.

❖ References

Silva et al., 2017; Chapla et al 1994; Author., 2020

❖Financial support

Capes: 88887.605788/2021-00
Fapesp 2020/12120-4