

the electrophysiological and histochemical data have also demonstrated that mPFC stimulation evoked a specific brain circuitry modulation of the serotonergic networks, which linked to the dorsal raphe nucleus in regulation of the mood and hippocampal-dependent memory behaviors.

DISCUSSION

Our findings suggested that electrical stimulation of the mPFC has the potential to be developed into a therapy to treat patients suffering from dementia. Importantly, the mechanisms by which stimulation improves memory functions are likely to be mediated by a complex hippocampal signaling pathways that underlie the process for memory acquisition, consolidation and retrieval.

PP 89 ELECTRICAL STIMULATION RESCUES DOPAMINERGIC DEGENERATION IN THE DORSAL RAPHE NUCLEUS AND ENHANCED HIPPOCAMPAL NEUROGENESIS OF VULNERABLE DEPRESSIVE- LIKE RATS

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INTRODUCTION

Electrical stimulation has been proposed as a potential therapy for patients with treatment resistant depression. In this study, we investigate the effects of high-

frequency stimulation (HFS) in different brain regions on various depressive-like behaviors using the stress resilience and vulnerable rat depression models.

MATERIALS AND METHODS

Rats were exposed to chronic unpredictable stress procedures (CUS) for 3 weeks. Vulnerable and resilience animals were characterized based on their sucrose consumption levels during CUS procedures. CUS-treated rats received HFS in the lateral habenula (LHb), ventromedial prefrontal cortex (vmPFC), nucleus accumbens (NAc) and they were tested for depressive-like behavioral experiments. The morphological changes of dopaminergic neuron and hippocampal neuroplasticity were determined by immunohistochemical labeling methods.

RESULTS

CUS exposure for 3 weeks increased number of animals (51%) exhibiting reduced sucrose consumption, separating the resilience and vulnerable group of CUS-induced model. CUS vulnerable sham animals demonstrated anxiety-like behavior, decreased motivation and increased immobility compared to that of the resilience group, implicating high susceptibility of vulnerable individuals to the CUS procedure. Interestingly, vmPFC HFS significantly reduced anxiety response, increased hedonia and motivation levels for food intake in the vulnerable group compared to the resilience group, while HFS in other brain regions did not show difference. HFS in vmPFC and LHb also showed reduced behavioral despair in both CUS vulnerable and resilience group. In histochemistry, our results demonstrate that vmPFC HFS rescued the stress-induced dopamine neuron

degeneration in the dorsal raphe nucleus, as well as increased hippocampal neurogenesis of stress vulnerable animals.

DISCUSSION

These results suggest that vmPFC HFS effectively restores depressive-like behaviors by mechanisms of dorsal raphe dopaminergic neurons restoration and enhanced hippocampal neuroplasticity in the vulnerable CUS-induced model. Further studies are needed to understand the underlying mechanisms of HFS on the resilience and vulnerable group of CUS-induced depression models.

PP 90

TRAUMA SCORING SYSTEMS IN MALAYSIA: WHICH ONE?

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INTRODUCTION

In Malaysia, trauma is the third most common cause of admission to government hospitals, and 6th principle cause of death. A good trauma score can be used to estimate the severity of the disease, assist in appropriate triaging of the patient, a benchmark tool to compare between centres and research utility for epidemiological databases. Trauma and Injury Severity Score (TRISS) commonly used to evaluate the severity and probability of survival is complicated and resource intensive. Our objective is to study whether simpler trauma scorings is comparable to TRISS in evaluating severity of trauma.

METHODS

A retrospective analysis of data from the National Trauma Database (NTrD), which included 8 secondary hospitals in Malaysia were done. Patients above the age of 16 who presented between 1/1/2006 to 31/12/2009 were sampled. Cases with missing variables were excluded from analysis. The trauma scores of TRISS, Kimura simplified TRISS (sTRISS), Revised Trauma Score (RTS), Kampala Trauma Score (KTS), KTS II, GAP, mGAP were calculated for each patient. Discrimination was assessed using the area under the receiver operating characteristic curve (AUROCC).

RESULTS

A total of 3322 patients were included after exclusion of missing variables. All scores performed equally well with AUROCC value of between 0.84-0.85; TRISS 0.85 (95% CI 0.84-0.86), RTS 0.84 (95% CI 0.82-0.85), KTS 0.84 (95% CI 0.83-0.85), KTS II 0.84 (95% CI 0.83-0.85), GAP 0.85 (95% CI 0.84-0.86); mGAP 0.84 (95% CI 0.83-0.86), Kimura sTRISS 0.85 (95% CI 0.84-0.86).

DISCUSSION

Malaysia a middle-income nation does not have the capacity for highly resource intensive trauma scoring system such as TRISS which are often complex and time consuming. Our study has shown that using simpler trauma scoring systems perform as well as internationally accepted TRISS and can be used for benchmarking and trauma quality audits.