

lithium-like effects in a range of pre-clinical models including reduced function of a specific Gq-coupled 5-HT receptor (5-HT<sub>2A</sub>) in molecular and behavioural assays. The latter observation is of interest because the 5-HT<sub>2A</sub> receptor is linked to impulsivity control. Indeed, our experiments show that ebselen decreases impulsivity in different behavioural models, likely through a 5-HT<sub>2A</sub> receptor mechanism. These findings have provided a rationale for the repurposing of ebselen for disorders such as bipolar depression, which feature high impulsivity, and its rapid progression to proof-of-concept studies in healthy volunteers, which are ongoing.

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## CAREER IN MEDICAL COMMUNICATIONS: IS IT RIGHT FOR YOU?

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Be it academics or industry, no one can deny the importance and significance of communicating the data or the information that is generated. Especially, from a pharmaceutical company standpoint, development of a drug takes years before it reaches the hands of a patient. It goes through different phases from molecule synthesis, preclinical phases, to clinical phases, which generate huge amount of information about the product. Furthermore, even after the approval, companies would keep on generating more data in the form of postmarketing studies, surveys, and studies for other indications. Medical Communications (med comms) has emerged as a very important department in the pharmaceutical industry to generate written, audiovisual, oral, or online materials dealing with medicine and healthcare. Although the conduct of pharmaceutical development has always been heavily regulated, regulations on the communications have also started evolving since the last decade. The session will provide an overview of medical writing and where it fits in the spectrum of a pharmaceutical company, guidelines for publications, good publication practices, and career possibilities for the researchers and students in med comms.

## PARTICIPANTS ABSTRACT

P1

### IN VITRO DETERMINATION OF CARBONIC ANHYDRASE INHIBITION OF THE FLOWERS OF *VANDA ORCHID, VANDA TESSELLATA* ROXB. (1795) BY MODIFIED COLORIMETRIC MAREN T.H. (1960) METHOD

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The orchid, *Vanda tessellata* was chosen by the researchers because of the presence of the constituents such as alkaloids, flavanoids, and glycosides in the family Orchidaceae that might give an inhibition activity of the carbonic anhydrase enzyme. This study aimed to determine the *in vitro* inhibition of carbonic anhydrase of *V. tessellata* flower extract. With the use of modified colorimetric Maren T.H. (1960) method, the time in seconds for each test solution to change its color after the rate of CO<sub>2</sub> hydration was recorded. Two solvents were used for the extraction: the semipolar, 95% ethanol and the nonpolar, dichloromethane solvents. The percent inhibition activity of carbonic anhydrase of the different concentrations of ethanol-based extract (1, 25, and 50%) and dichloromethane-based extract (1 and 10%) test solutions were determined. Results showed that the ethanol-based extracts of *V. tessellata* in different concentrations have an inhibitory effect, whereas the dichloromethane-based extracts of *V. tessellata* showed no inhibitory effect in all. For ethanol-based extracts, the concentration with the highest activity was 50% followed by 25%, which changed its color from red to yellow with an average time of 13.11 and 11.57 s, respectively. However, 1% concentration with an average time of 7.56 s did not exhibit an effect. The researchers recommend utilizing different blood types to observe different reactions to the inhibition of carbonic anhydrase. The enzymes to be added to the test solutions must be quantified. The positive control, freshly prepared, should not be limited to only one concentration, and the test solutions should have concentrations greater than 50%. Phenol red indicator and pH of the buffer must be checked and monitored from time to time to ensure their sensitivities. Other indicators were used especially when working with colored extracts or test solutions. Finally, the specific active constituent of *V. tessellata* that is responsible for the inhibitory effect of carbonic anhydrase enzyme is isolated.

P2

### GENOTYPE-PHENOTYPE CHARACTERIZATION OF SPINOCEREBELLAR ATAXIAS (SCAs) IN SRI LANKA

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Personalized therapies for spinocerebellar ataxias (SCAs) is challenging given the diverse genetic causes of SCA and variability in clinical features, even in a defined genetic cause, which can vary among ethnic populations. To perform genetic analysis of Sri Lankan clinically diagnosed SCA patients and to evaluate genotype–phenotype correlation, SCA patients ( $n=68$ ) aged 18–73 years [male – 34 (50%) and female – 34 (50%)] [familial inheritance  $n=38$  (56%); paternal – 22 and maternal – 16] were studied. Sociodemographic factors, clinical data (scale for the assessment and rating of ataxia (SARA), unified Huntington disease rating scale – Unified Huntington Disease Rating Scale (UHDRS) functional scale, extrapyramidal symptoms (EPS), ophthalmological signs, oculomotor deficits, etc.), and family history were recorded. Connected Acyclic Graph (CAG) repeat analysis was performed for SCA1, SCA2, SCA3, and SCA12. SCA subtypes were SCA1 ( $n=29$ , mean AO =  $35.8 \pm 10$  years), SCA2 ( $n=10$ , mean AO =  $33.8 \pm 13$  years), and SCA3 ( $n=11$ , mean AO =  $39 \pm 9$  years). Genetic etiologies of  $n=20$  were to be elucidated for other subtypes with clinical heterogeneity. Mean CAG repeat length of normal/abnormal alleles of SCA1 was  $28.3 \pm 2/54.6 \pm 6$ , for SCA2 was  $22 \pm 1/42.3 \pm 5$ , and for SCA3 was  $26 \pm 2/58.6 \pm 10$ . UHDRS functional scale mean score was as SCA3 > SCA2 > SCA1; SCA1 versus SCA2– $P > 0.03$  and SCA1 versus SCA3– $P > 0.009$ ; SARA mean score was as SCA1 > SCA2 > SCA3; SCA1 versus SCA3– $P > 0.003$  and SCA2 versus SCA3– $P > 0.03$ . Oculomotor, nystagmus ( $P > 0.04$ ), slow saccades ( $P > 0.01$ ), and dysphagia ( $P > 0.03$ ) were significant in SCA1; SCA1 functional ability correlates with EPS – myoclonus  $P > 0.007$  and rigidity  $P > 0.03$ . Resultant interpatient variability in genotypes to clinical phenotypes from a genetically admixture population of South Asian origin warrants similar studies with a large sample size that would be a unique resource toward future personalized medicine.

P3

## COMPARATIVE STUDY OF SIMPLE VISUAL AND AUDITORY REACTION TIME IN HEALTHY PARTICIPANTS

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Reaction time is the minimum time needed to respond to a stimulus. It is a non-invasive procedure for determining sensorimotor coordination. The objective of the study was to find out whether the reaction time was faster for auditory or visual stimuli in males and females. The study was conducted on 120 young right-handed healthy participants (60 males and 60 females) of age 10–14 years with normal hearing and sighted vision after obtaining approval from the Ethical and Institutional Review Committee. Auditory and Visual reaction time was recorded using Direct RT software program. Participants performed both visual and auditory reaction tests. The mean auditory and visual reaction time was calculated by excluding the first and last values after the data was obtained. There was a significant variation of auditory and visual reaction time in both males and females. Auditory reaction time was faster than visual reaction time in both males and females. Visual and auditory reaction time was shorter in males compared to females.

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## SYNAPTIC PLASTICITY AND MEMORY DEFICITS IN RAT MODEL OF ACUTE KIDNEY INJURY

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Recent evidence suggests that renal ischemia/reperfusion may have impairment effects on brain function. Therefore, this study aims to investigate the effects of bilateral or unilateral renal ischemia reperfusion on learning memory and hippocampal synaptic plasticity. The model groups were established by bilateral or unilateral renal ischemia for 60 and 120 min, respectively and 24 h of reperfusion. A shuttle box apparatus was used for passive avoidance learning and memory assessment. Moreover, the animals were evaluated for synaptic plasticity by field potential recording. The results of this study demonstrated that the 60 min bilateral or 120 min unilateral renal ischemia along with 24 h of reperfusion resulted in impaired long-term potentiation and memory performance. Particularly, the field potential recording demonstrated that bilateral and unilateral renal ischemia led to extreme inhibition in long-term potentiation compared to the control and sham groups; this inhibition was accompanied by a significant increase of the normalized Polypropylene random copolymer (PPR) (PPR after HFS/PPR and before Hardware functionality scan (HFS)) as an index for release probability.