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Munvar Miya Shaik
Human Genome Centre
School of Medical Sciences
Universiti Sains Malaysia
Biography

• Munvar Miya Shaik has Bachelor degree in Pharmacy and Medical Master degree in Medical Pharmacology. His PhD thesis was focused on Neurogenetics especially focusing on migraine genetics.

• He has vast experience in teaching medical pharmacology to Medical and dental students.

• Currently his research is focused on Migraine genetics.

• He is also involved in Alzheimer's and Parkinson diseases research clusters.

• He has published various research articles in high impact factor journals.

• Currently he is located in Universiti Sains Malaysia, Kelantan, Malaysia.
Research interest

• Neurogenetics focused on Neuro-degenerative disorders
• Role of microRNA as biomarker and therapeutic target in Neuro-degenerative disorders
• Pharmacoeigenomics of Migraine
• Therapeutic targets from Traditional medicines to treat Neuro-degenerative disorders
• Epigenetics of Neuro-degenerative disorders
Recent publications

2014 - 2012


Recent publications


Pharmacoepigenomics of Migraine

• Over the years, many pathological theories related to migraine were published

• However, Migraine is not understood completely in view of Treatment

• Various factors, such as alcohol, smoking, nutrition, stress, environmental changes, exercises and menstrual cycles in women, have been reported to play a role in causing migraines
Why?

- However, the Question is

  Why certain precipitator cause migraine in some patients but not others?

This is still UNKNOWN
Genetics

• But there is a role of genetic vulnerability in selective physiological alterations.

• This provides an opportunity to investigate the genetic basis of migraines based on previously published pathological theories of migraines due to migraine’s heritable nature.
Genetics

• Based on Cortical Spreading Depression and other theories

Vascular Genes
(Related to blood vessels)

• Based on Hormonal affect on Migraine

Hormonal Genes
(Related to Estrogen)
Vascular Genes

Homocysteine → Highly reactive amino acid

Endothelial cell injury (Research done in animals and cell lines)

↓↓ Vit. B₆, B₉ & B₁₂ (For methylation & Conjugation of HCY)

Diet

MTHFR Enzyme (Methylene tetrahydro folate reductase)

↑↑ Nitric Oxide

MTHFR Gene

(Harker, Ross et al. 1976; Wall, Harlan et al. 1980; Stamler, Osborne et al. 1993; Cooke and Tsao 1994; Hering-Hanit, Gadoth et al. 2001)
Migraine

- Higher levels of Homocysteine
- Low levels of Vitamin B₆, B₉ and B₁₂
- MTHFR gene defect
Vitamins B for Migraine?

Intake of Vit. $B_6$, $B_9$ & $B_{12}$

- Lowering Homocysteine levels
- MTHFR gene defect

↓↓ Migraine disability
Estrogen & Homocysteine

Estrogen & Vitamins

• Vitamin $B_6$ $\rightarrow$ decrease the biological activities of oestrogen.

• Vitamins $B_6$, $B_{12}$ and folate are key cofactors of the enzymes implicated in oestrogen conjugation and methylation.

• Therefore, diminished concentrations of B vitamins can upset oestrogen detoxification and cause higher levels of circulating oestrogen.
Estrogen & Homocysteine

Estrogen & Homocysteine

Hypothesis

• The role of epigenetics in migraine is a new, unexplored field that has pharmacological implications.

• The proposed study of vitamin supplements aims to examine the reduction of homocysteine levels associated with the MTHFR C677T polymorphism in migraine patients.

• It would also be interesting to study the DNA methylation profiles of the promoter regions of candidate genes in migraine patients to better explain migraine occurrence.
Munvar Miya Shaik
Human Genome Centre
School of Medical Sciences,
Universiti Sains Malaysia
Kubang Kerian, 16150
Kelantan, Malaysia
H/P: +60-10-9227448

Email: munvar.shaik@gmail.com

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