



PHYSIOLOGICAL DISCOVERIES MADE BY MALAYSIAN PHYSIOLOGISTS

Anis Shathirah Binti Mohd Aderi

KSMU

INTRODUCTION

The study of physiology has its roots in ancient India and Egypt. As a medical discipline, it dates back at least to the time of Hippocrates, the famous "father of medicine" - around 420 BC. However, the development of physiology continues to this day. Malaysian physiologists are making a significant contribution to the development of physiological science.

RESEARCH PURPOSE

To study the most significant discoveries in the field of physiology made by Malaysian scientists in recent times.

MATERIALS AND METHODS

To carry out this work, I studied modern scientific literature on the achievements of modern Malaysian scientists in the field of physiology, and systematized the material obtained

RESULTS

In 1910, when a deadly epidemic of pneumonic plague broke out in China, the Malaysian physician Wu Lien Teh, convinced at the autopsy of deceased patients that the plague was spread by airborne droplets, turned surgical masks into more durable masks with several layers of gauze and cotton wool for air filtration. This was the beginning of the mask we know today as the N95 mask, which is heavily used today to prevent people from getting infected with COVID-19.

Professor Dr Masliza Mahmod is working on studying the problems of occurrence and treatment of aortic stenosis. Aortic stenosis is a narrowing of the aortic valve opening, causing blood flow restriction through the valve. This leads to an increase in the work of the heart. Severe constriction can cause symptoms such as pain, shortness of breath and fainting. And this, in turn, can lead to heart failure. Numerous studies have shown that people with aortic stenosis have excess fat in the heart muscle. Cardiac steatosis is toxic to heart muscle and can lead to decreased heart function. Dr Masliza Mahmod suggested treating this problem with fibrates, "a drug that is already being used to treat high blood fat, which reduces excess fat in the heart and improves heart function."

Prof. Dr. Anthony Lim Lee Wei studied and proposed a method of deep stimulation of the fornix region to improve the condition of patients with Alzheimer's disease and spatial memory loss.

Professor Ishwar S Parhar studied hypothalamic neuropeptides that influence social behavior which is a key component of reproduction because it is necessary for successful fertilization. Social behaviors such as courtship, mating and aggression closely related to sex steroids such as testosterone, estradiol and progesterone. The secretion of sex steroids by the gonads is regulated by the hypothalamic-pituitary-gonadal axis (HPG) in vertebrates. Gonadotropin-releasing hormone (GnRH) is the main hypothalamic neuropeptide that stimulates the release of gonadotropin from the pituitary gland. However, Professor Ishwar S Parhar showed the enormous role of neuropeptides containing the C-terminal group Arg-Phe-NH₂ (RFamide peptides) in vertebrate reproduction. In particular, two key RFamide peptides, kisspeptin and gonadotropin-inhibiting hormone (GnIH), have become critical accelerator and suppressor of secretion of gonadotropins. Kisspeptin stimulates GnRH release directly affecting GnRH neurons, while GnIH inhibits gonadotropin release by inhibition of kisspeptin, GnRH neurons, or pituitary gonadotropic hormones. These neuropeptides can regulate social behavior by adjusting the HPG axis.

Dr. Lin Koi Ong and his team are exploring ways to help patients with secondary strokes. Improving brain recovery after stroke remains a challenging area. They demonstrated that intracerebral administration of a glycomimetic compound and a combination of recombinant human brain-derived neurotrophic factor improved post-stroke spatial memory. In addition, a reduction in stroke-induced reactive astrogliosis and loss of the thalamocortical connection were observed in this combination of treatments. Research is being actively carried out.

Thus, Malaysian researchers of physiology contribute to the development of modern medicine in general and physiology in particular.

CONTACTS

anishshathirah@gmail.com