ECRONICON OPEN ACCESS

EC OPHTHALMOLOGY
Editorial

Glitches of the Glaucoma Research

Janardan Kumar*

Professor of Microbiology and Former Chair, Department of Natural Sciences, Becker College, Worcester, USA

***Corresponding Author:** Janardan Kumar, Professor of Microbiology and Former Chair, Department of Natural Sciences, Becker College, Worcester, USA.

Received: March 25, 2019; **Published:** May 13, 2019

The complexity of glaucoma research is enormous and it isn't an exaggeration given the levels of difficulties and lack of information that have surpassed the complexity of cancer research. By definition, glaucoma is a progressive optic neuropathy commonly associated with intraocular pressure (IOP). This predicts itself that there is a straight line of demarcation with the issues of two distinct horizon of the eye globes and emerging two schools of thoughts among clinician scientists. Glaucoma research is a land of tremendous opportunities for basic scientists, as very little is known about the cell biology and/or neurology biology of the eye, but the group of basic scientists are separated between two schools of thoughts. Like any other science, the science of glaucoma is not free from immature facts, largely unresolved issues, and it is likely to have low priority of research as its not a life threatening issue.

To understand the cellular physiology of outflow pathways, basic scientists are bound by the limitations in their studies: the periphery of the anterior chamber of the eye which reflects the study of IOP. But it becomes least meaningful when we come across the situation that IOP is commonly associated with glaucoma. Nevertheless, we boost our moral upon the realization that IOP reduction is the only option till date, to treat the progression of glaucoma. Multiple types of glaucoma have been classified on the basis of the clinical diagnosis of the anterior chamber. The optic neuropathy is associated with the issues of the posterior chamber of the eyes. Eye physicians diagnose or suspect glaucoma based on the clinical data of both the anterior and posterior chambers without having clinical samples or specimens; therefore, germinating two schools of thoughts among physicians without solidarity of experimental evidences. Thus, the clinical data is fictitious for the basic scientists, if the clinical samples are not available. Nonetheless, the biggest challenges for the basic scientists is to understand glaucoma based on experimental evidences that is incomplete and unreliable. most eye samples given to basic scientists are only ethically available until after death of that patient. By that period of time, we can't assume that the particular patient wouldn't have been exposed to the multiple chemicals for treatment. Even post-mortem collection and storage of the aqueous humor of glaucoma patients from the operation theatre to the analytical laboratory impact the integrity of the sample. The interference of ethical and scientific issues make it difficult to conclude reliably the root cause and development of a dynamic and complicated neuropathy like glaucoma.

Surprisingly, most of the clinical scientists have priority to discover drugs for glaucoma even though the mechanistic details of outflow resistance for different types of glaucoma are largely unknown or even not established yet. For instance, the primary open angle glaucoma (POAG) has no common targets of outflow resistance as predicted by the closed angle glaucoma though very little is known about understanding the role of aqueous humor outflow and/or the cells of outflow pathway. Nevertheless, the basic scientists within their limitations have shown enormous progress towards understanding the dynamics of aqueous humor outflow or the discovery of drugs. However, it is unfortunate that the clinical scientists and the basic scientists are not on the same page due to lack of animal models for glaucoma. For gaining the popularity of glaucoma research, it is needed to reconsider the resonating thoughts as "not allowing postdocs to take projects with them, or competing with them when they do, harms science" in Nature by Ben A. Barres, a professor of neurobiology at Stanford University School of Medicine. Overall, who owns what when it comes to the clinical and basic scientist relationship that affects to some extent in advancement of glaucoma research.

Moreover, what is overlooked by the ophthalmology scientists are equally important glitches of the glaucoma research for not mentioning the misnomers. So let's not forget about the incredible book-post was presented to me by Dr. Katta since I was invited as an honorable guest speaker at 5th International Conference on Clinical and Experimental ophthalmology, 2015, Valencia, Spain. It is noteworthy that the title of the book-post was "Grievances in literature ophthalmology-our study-our solution" by Dr. Katta S.V. and Dr. G. Ramchandra Rao (http://www.slideshare.net/drkattasv/questionable-medical-terms-in-ophthalmology-presentation). Similar to the concept of Dr. Katta, I strongly believe that the misnomers including the organ culture, myocilin or TIGR (trabecular meshwork inducible glucocorticoid response) are being practiced in the field of glaucoma research that misled us, and mentioning the misnomers will help in the dissemination of scientific information and for the new glaucoma researchers.

Of significance, it wouldn't be justified if we don't mention the praiseworthy contribution of basic science to the discovery of Rho-GTPase inhibitor based glaucoma drugs and/or the model of pore funneling hypothesis for outflow resistance. But, it's popularity remains limited since different types of glaucoma are taken into consideration at a time by clinician scientists. It is our belief that studying a particular type of glaucoma with combined multidisciplinary approach would be the most fruitful and attractive area for the basic research, too.

At last, my apologies for the biased opinion but it would be my humble request to unite both the clinicians and basic scientists to find the root cause of glaucoma and if possible being focused to one type of glaucoma. Moreover, have a united front on understanding the dynamics of the aqueous humor outflow. It is needed to develop a perfect model of aqueous outflow and the outflow resistance similar to the pore funneling hypothesis for outflow resistance that was proposed by Mark Johnson to elucidate the physiological phenomena associated with glaucoma.

Volume 10 Issue 6 June 2019