

New Beginnings for *Medical Gas Research*

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Medical Gas Research was first created in 2011 to provide a stage for researchers in both clinical medicine and basic sciences to communicate, exchange information, and publish articles relating to the medical gas family. The medical gas family is quite large and consists of oxygen, hydrogen, carbon monoxide, carbon dioxide, nitrogen, xenon, hydrogen sulfide, nitrous oxide, carbon disulfide, argon, helium, and other noble gases. *Medical Gas Research* was innovative since it was the first international journal that focused on *medical gas research* on the basic, clinical, and translational sciences levels such as anesthesiology, diving medicine, emergency medicine, pharmacology, physiology, and neuroscience (Zhang, 2011).

A few years ago the goal of *Medical Gas Research* was to be at the forefront of leading the discussion on how medical gases can be practically applied and offer therapeutic options to numerous medical complications (Liu et al., 2011). The journal also aimed to cover technical and historical insights, as well as, ethical and social issues as it relates to the medical gas research field. Since then we have been privileged to share with the world over 120 publications relating to medical gases and their applications over those years.

Last year we received and published articles ranging on a variety of topics such as the pharmacokinetics of chronic administration of xenon and argon gases (Katz et al., 2015), the potential of normobaric hyperoxia as a treatment for acute ischemic stroke (Weaver and Liu, 2015), and the effectiveness of clinical application of hyperbaric

oxygen treatment in various diseases like traumatic brain injury and post traumatic stress disorder (Harch, 2015; Hu et al., 2015; Stoller, 2015; Yan et al., 2015). Also one article demonstrated that hyperbaric oxygen treatment was effective in reducing acute distal colitis in rats by down-regulating pro-inflammatory cytokines (Parra et al., 2015).

The application of hydrogen sulfide as a medical gas was a popular topic of our publications last year as well. We published articles concerning hydrogen sulfide mitigating fatty liver by improving lipid metabolism in high-fat diet induced obese mice, as well as hydrogen sulfide treatment restoring perfusion to chronically ischemic tissue in a rat hind limb model (Langston and Toombs, 2015; Wu et al., 2015). In addition, another article showed that hydrogen sulfide releasing moieties in the compound ATB-346 were able to inhibit alveolar bone loss and inflammation in rats with ligature-induced periodontitis (Herrera et al., 2015).

Another popular topic of our publications last year concerned hydrogen, the lightest and most abundant element (Dixon et al., 2013). One article that contributes to the translation of hydrogen treatment explored the concentration levels of super-saturated hydrogen administration *via* oral, intravenous drip infusion, and inhalation (Kurokawa et al., 2015). Another article from last year reviewed all the original molecular hydrogen studies in the field after the landmark article in *Nature Medicine* by Oshawa and colleagues in 2007 which ignited interests in hydrogen research (Ichihara et al., 2015). We also published an article that demonstrates molecular hydrogen as a potential therapeutic solution to male infertility, since hydrogen treatment was able to improve low sperm motility (Nakata et al., 2015).

Today *Medical Gas Research* still has the goals of being a leader in the understanding of how medical gases can be employed as novel therapies as well as their expansion into everyday life. We hope that *Medical Gas Research* will continue to facilitate an open forum for physicians and researchers, along with providing an international stage in this exciting field for many years to come!

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