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EDITORIAL

The Player and His Equipment

There are many sports and many athletes, and some of these sports have a heavy reliance on the equipment with which the sports are played. From the level of high school to professional leagues, as players increase their respective skill levels to tremendous degrees, the knowledge, refinement, and the expense of such equipment commensurately increases. After all, how many of us have purchased a single golf club for $400.00 or a bowling ball for $300.00? Moreover, would we golf or bowl any better if we did? The professional athlete relies on his equipment in a way few of us can imagine. For example, a tennis player does not come to court with seven rackets to completely fill up those oversized shoulder bags, but is doing so because each racket in that bag serves a specific purpose: service, more control and less power, less power and more control, return and volley, and backups for breakage. The stringing is important too, and determines accuracy and power. The players are serious about this, too. For example, the Williams Sisters have their rackets strung in the early morning, irrespective of whether the rackets were used at all the previous day. We should take a lesson from them and be at least as serious about our equipment as they are about theirs.

Like professional athletes, we, as nephrologists, must know our equipment. But, do we? Tellingly, sometimes we don't, and we have forgotten the nuances and sometimes the essentials of our most valuable pieces of equipment, that is, our peritoneal and blood dialysis machines. These vital parts of our professional careers have been commoditized but should neither be neglected nor forgotten. After all, hemodialysis and peritoneal dialysis do save the lives of nearly a million people worldwide and of 350,000 people alone in the United States. How many other singular therapies can lay claim to such numbers? Despite that there are really not that many types or numbers of extracorporeal therapy machines, we simply don't fail to appreciate or know these inventions of visionary physicians well enough. Worse yet, the use of these equipments are missed during the most critical times, such as during intoxications. This unhappy fact was revealed in a survey of 30 Canadian nephrologists.[1]

So, what is the reason for this gap in knowledge? Basically, it is a lack of fundamentals, and we are not training our understudies in dialytic therapies as comprehensively as we must, to prepare them for exigent circumstances in which such therapies are lifesaving. Extracorporeal machine technology and automation have evolved and progressed, we have not. As things were made simple for us, we became simpler, taking our own technology for granted and forgetting the words of a certain Swiss-Austrian physicist: **"Everything should be made as *simple* as possible, but not simpler."**

Because most nephrologists do not personally own a hemodialysis machine, it is easy to dismiss that which we use daily and to forget that the optimized use of a hemodialysis machine requires critical knowledge and maintenance of both the machine and the man. Unlike automobiles (and I sit here in Detroit writing this), there are just not that many makes and models of hemodialysis, peritoneal dialysis, and continuous renal replacement therapy machines that should make our heads spin. We just need to know how to use them as, unlike our forefathers in the field, we have not had to design or create them.

In this issue of *Advances in Chronic Kidney Disease*, our three Guest Editors have aggregated experts in several fields that engage our most valuable pieces of equipment that effect extraordinary, extracorporeal cleansing technologies, principally, the hemodialysis machine. Dr. Ghannoum provides a historical perspective to this issue and notes that machine-based detoxification preceded hemodialysis by decades and exhorts the reader to read and know what's parked in his own garage.

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Ghannoum describes the "EXTRIP (Extracorporeal Treatments in Poisoning) workgroup, formed by several international experts in different medical fields and represented by over 20 societies," and whose stated mission is to provide oversight of therapies and trials in poisonings that we have encountered and will continue to encounter.

Along these lines, Dr. Winchester renders his knowledge regarding those intoxications amenable to extracorporeal removal. Adding to his comments, Dr. Goldfarb notes that advances in extracorporeal toxin removal have largely gone unnoticed and expounds on how these substantial improvements permit therapies of some common therapy-related poisonings, heretofore considered nonamenable to treatment. An overview of some of the newer xenobiotic and drug intoxications are provided by Dr. Harbord, a toxicologist. Drs. Weisbord and Abu-Alfa discuss the toxicities of iodinated contrast media and gadolinium-based contrast agents and, more importantly, submit their respective analyses of the roles of extracorporeal clearance of these toxic substances. Finally, Dr. Ward provides an insightful dialogue of the criticalities associated with water management and portrays its duality as an essential component and a potentially fatal one.

Upon completion of this issue, I predict that you, the nephrologists, will again take even greater pride in what you do, just as you did upon completing your fellowship in nephrology, replete with the knowledge of how renal replacement therapy could resolve a variety of life-threatening intoxications. Our intrinsic role as toxicologists have not diminished and must continue to define us. Have confidence that when your smartphone receives that text message, "Emergency: poisoning," you will be more than prepared, just like any player and his equipment.

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Editor

Reference

1. Ghannoum M. Blood purification in toxicology: nephrology's ugly duckling. *Adv Chronic Kidney Dis.* In press.