Eliminating Mistakes In Managing Coccidioidomycosis

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This editorial is in response to the article "Common Mistakes in Managing Pulmonary Coccidioidomycosis" by Drs. Galgiani, Knox, Rundbaken and Siever (1). These authors are eminently qualified to discuss the management of pulmonary coccidioidomycosis. However, these "mistakes" have been made for many years and, truth be known, the authors probably made some of those mistakes when faced with their first patient with a serious *Coccidioides* infection. What obviously is missing from these experts are **solutions** to keep the mistakes from happening. I would like to fill in the deficit by offering remedies for important issues raised by the article, and more.

Who am I to offer solutions? I am board-certified in Infectious Diseases (therefore, qualified). I went into private practice in Phoenix 35 years ago solely doing Infectious Disease consultations. As a consequence I am pretty sure I have seen more patients with coccidioidomycosis (I can spell it 4 c's, 4 i's and 4 o's; abbreviated by me as "coccy" which avoids the often used contraction of "cocci" which applies to a completely different pathogen) than anyone in the world. I am not smarter, but there are 5 million people in Phoenix and they all get coccy - this qualifies me as experienced. In addition, I was Clinician of the Year for the Infectious Diseases Society of America (IDSA) in 2007 (validation as a clinician and not a kook). My perspectives have evolved as a problem-solving clinician in the coccidioidomycosis trenches. Early on I quickly came to the conclusion that the IDSA guidelines for the treatment of coccidioidomycosis were of value only to lawyers and administrators, more about that later. Let's get started on solutions.

Number 1. To get a license to practice medicine (all specialties) in Arizona you have to demonstrate proficiency in coccidioidomycosis. Before coming to Phoenix I spent some time defending my country in Hawaii and I had to get a medical license to practice medicine in Hawaii. At that time, Hawaii licensure required "proficiency" in leprosy. You were given a booklet on leprosy and then you were given the choice of watching a movie on leprosy or actually seeing patients with leprosy, I chose the latter. Then you had to pass a written test on the diagnosis of leprosy. It must have helped because that test is no longer required and there are no Hansen's Disease patients on Molokai. Implementing a similar proficiency test for coccy licensure in Arizona might require legislation which should not be too difficult since most of the legislators have either had Valley Fever or heard about it. It would be one of the few things of educational value about getting a medical license to practice medicine in Arizona.

Number 2. Develop a reference laboratory solely for *Coccidioides* testing. Even if you do everything right in managing coccy, one of the major impediments to the management of coccy is a lack of a rapid and accurate test for the disease. A not un-common scenario (i.e., "mistake") is a primary care physician, recently moved to Arizona and trained elsewhere sees a patient on a Friday evening as an outpatient. The patient has a mild community-acquired pneumonia and has an occasional wheeze on examination. The patient gets oral doxycycline and a short course of steroids and told to schedule a follow up appointment in a week. A coccy serology is too frequently not ordered, but if it is done, the results will come back in a minimum of 4 days later and often still does not get back to the physician in a timely way. Follow up does not happen as the steroids made the patient feel better - for a while. The next time the physician finds out about the patient, the coccy has disseminated or a letter is received from a lawyer. The point is that serology for coccy is inaccurate too often and the turn-around time too long. Some of the smaller hospitals do not do coccy serology testing on a daily basis and/or on the weekend. That means patients with a fulminant pneumonia in the ICU do not get a serologic diagnosis until precious time has passed. The solution is a reference laboratory that does only coccy-related tests rapidly and accurately. In my experience, non-clinicians like laboratory directors and pathologists decided the fate of coccy serology. Over the years I have had meetings with every hospital in Phoenix (more than 10) about the status of their coccy testing generally without sustained success. These tests need to be taken out of the hands of hospitals and commercial laboratories. The vast majority of my complicated coccy patients have had their serology tests done by Dr. Demo Pappagianis at his coccy laboratory at the University of California at Davis. These patients were followed by serologies done at that laboratory for over 20 years with amazing consistency and accuracy, illustrating that it can be done. A good businessman with good technicians under the right circumstance should monopolize coccy testing to the benefit of the Arizona community.

Number 3. Arizona needs a coccidioidomycosis registry. Perhaps now that there is a medical school in Phoenix, an effort can be made to collect better clinical and epidemiologic data on cases to enable clinical trials on the treatment of coccy. I mentioned the IDSA guidelines for the treatment of coccidioidomycosis previously. Those guidelines are on the basis of expert **opinion** and not much validated science – there are no double-blind controlled studies on the treatment of any type of infection due to coccy. If you are a physician dealing with a patient with disseminated coccy and have no experience with the disease – those guidelines are of no substantial help. The IDSA guidelines should be abandoned and substituted with a good review on the treatment of coccy written by Dr. Galgiani and if you are still lost, call the Valley Fever Centers of Excellence for advice. Huge amounts of time and money are squandered on these guidelines. A coccy registry – similar to a tumor registry, would provide the opportunity to do good clinical studies in Phoenix because of its population base.

Since coccy is a reportable disease in Arizona there should be an effort to establish more detailed information on patients hospitalized in Arizona. Most major hospitals have infection control nurses who are accustomed to data collection. I propose they fill out more detailed information on patients hospitalized with complicated coccy. The infection

control nurses should be incentivized by compensating the infection control department for each report. There is much more information that could be collected (i.e., socio-economic impact) on the various forms of coccy. You get the picture. Since Arizona has the most reported cases of coccy in the Country we should be the leader in coccy and related issues.

Another interesting observation is that there are many more deaths in Arizona due to coccy than Ebola. Considering the amount of money given to Arizona devoted to Ebola, we need to develop a registry for Ebola and coccy, since we will never see a case of Ebola. In addition, when a coccy patient is entered into the registry a serum specimen should be collected and maintained at the reference laboratory for seroepidemiologic and other studies for emerging new tests and research.

Conclusions

The usual excuses for not implementing these suggestions are there is no money and/or time. However implementing these three recommendations would do more for coccy in Arizona and help resolve the “mistakes” made by its physicians than anything that has happened in the past 35 years. Money will always be an issue, but implementing mandatory proficiency in coccy should not be too difficult by absorbing it into the licensure process. A central coccy laboratory should be self-sufficient if run as a business. A coccy registry would need “orphan disease” status to get start up funds and should be maintained ideally by the new medical school in Phoenix and/or the Valley Fever Centers of Excellence. It will require experts like the authors, the Arizona legislature, Maricopa Medical Society and the new medical school to join forces to make Arizona a leader in all things coccy – except “mistakes”.

Reference

1. Galgiani JN, Knox K, Rundbaken C, Siever J. Common mistakes in managing pulmonary coccidioidomycosis. Southwest J Pulm Crit Care. 2015;10(5):538-49. [CrossRef]