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Clinical virology: An oxymoron or a useful tool?

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If a patient sees a physician because the patient has this, that or the other signs and symptoms and is told he or she "has a virus infection", they might begin to wonder whether they have walked or been carried into a shoe repair shop by mistake. Such impromptu diagnoses, even if correct, are neither useful nor inexpensive and one would be better off staying home in bed and getting some rest. The physician should order some sort of lab test that would help focus on what is ailing the patient or, at the very least, what is not. Nonetheless, it is unlikely that he or she could do anything for the patient anyway. A bit of "tincture of time" is called for in most virus infections. So, excluding the virus infections that can be treated (influenza viruses, herpesviruses, human immunodeficiency virus, respiratory syncytial virus, Lassa virus and a few others), there is not much the physician can do anyway, no matter the viral disease. For the most part, it is a race between the virus and the immune responses, so one is on one's own. When recovered, at least one knows one will hopefully not have to deal again with that particular virus.

On the other hand, for the good of the population, if not for the good of the individual patient, it is always useful to know what is circulating in a population.. Knowing what agent is or might be circulating in the community and recognizing the pattern of its circulation (the classic "what?, who?, when?, where?, and how?") often times can easily lead to prevention of other cases. Without knowing what we are dealing with, we are at the mercy of the disease. Therefore, the epidemiologic characteristics of a disease are second in importance only to identifying the disease and one cannot make a proper primary diagnosis without some laboratory backup. There's the rub! Diagnosis.

We virologists like to talk about geographic distributions, nucleotide sequences, electron microscopic characters, seasonality, and all sorts of other diagnostic techniques that are mostly (not completely) ineffective and untimely with respect to diagnosis of the patient, except as they relate to the rest of the community – epidemiology. What is needed, obviously, are rapid, accurate and precise techniques. A rapid diagnosis may be, but is not always helpful. An accurate diagnosis may be easy, but is not always dependable. A precise diagnosis may be easy, but it may not be possible with certain commercial or in-house kits, techniques, and other procedures. Rapidity, accuracy and precision are key diagnostic elements, with experience and overview absolutely necessary resources. The results of a test which indicates a 10% probability of either a rhinovirus or tick-borne encephalitis virus infection is less than useful and results in wasted precious time and effort (and money).

Because the need for rapid and precise techniques is great and a profit might be made by developing them, many civilian and military investigators, universities, and commercial interests have pitched headlong into this area of study and product development. It is a great time to be alive and interested in viral diagnosis. The twin, or at least related, fields of diagnosis and treatment clearly are moving towards prevention of diseases and interruption or retardation of viral replication and spread. Nonetheless, as do all scientific advances, they move slowly, meticulously, sometimes misleadingly, and sometimes erroneously towards the goals; five steps forward and one-step backwards, but forward in the end. Basic knowledge of immunology, pathophysiology, and treatment is helpful in managing the patient's illness, but such treatment can be similar to finding a black box in a large and unlighted room, unless the clinician has some idea of the cause of the illness. Taking a good guess can be very useful if the guess is correct, but taking a bad guess can be disastrous for both the patient and for the community.

When Nipah virus infections are diagnosed (clinically or using inaccurate laboratory assays) as Japanese encephalitis or "measles", when West Nile virus infections are diagnosed as St. Louis encephalitis virus infections, or any time when infection with virus X is diagnosed as infection with virus Y, we should all be embarrassed and perhaps a great deal less arrogant than we are. As much attention should be paid to a sample at 4 PM on a Friday as at 11 AM on a Tuesday; the patient and the clinician are waiting. Reports should be required to be made available as soon as possible so that the people who need to make larger decisions can have time to make them. Information, sometimes withheld for political reasons, should be disseminated as quickly and as honestly as possible. Diagnosis is, or should be, a team effort, beginning with the very basics: accuracy, rapidity and precision.

The bottom line in all this is the word "clinical": (A) the patient, (B) the patient, and (C) the patient. If the information we obtain is not bedside-relevant and patient-oriented, the information we obtain is useful, but only as a foundation for other studies or for cocktail party chatter. The aim of this new journal is to publish timely articles regarding "all aspects of basic and clinical microbiology relevant to infectious diseases, including current research on diagnosis, management, treatment, preventive measures, vaccination, and methodology. Clinical microbiology-relevant immunology, pathophysiology, genetics, epidemiological, and genomics studies" also will be published. I wish the publisher and editors good luck in receiving enough first class manuscripts to meet their goals. If they are hard-nosed about what is acceptable to the journal and what is not, they will not need luck.

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