

The scientific mind in clinical medicine

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Medical science has started walking at the very beginning of scientific rationalism, having clinical research as basic methodology for around a century.

In fact, the individualization of all pathology nosological entities, up to the advent of image and biochemistry methods, has been the result of using semiology means of direct observation along with pathological anatomy methods by hospital physicians. At this stage of Medical History and among the group of physicians who revealed to be great researchers some truly genial names emerged as Harvey, Auenbrugger, Laennec and Corvisart.

The development of paraclinical biomedical areas has driven the priority of research and the progressive enrichment of medical sciences towards such sectors.

Simply the ultimate goal of most acquisitions of basic research are the actual patients, i.e., humans admitted to hospital wards, under the care of practical physicians who will test the correct use of such scientific findings.

At least, this drives every physician, mainly in hospital settings, to be updated, aware and motivated regarding the scientific grounds of modern clinical Medicine that I will try to approach under the following items:

- Scientific method and information cult;
- Clinical research aspects;
- Epidemiologic investigation;
- Communication practice.

Scientific method and information cult

Since the early stages of the scientific revolution take off, mankind has never really got freed of empirical or mythical trends that until then have dominated the society thinking and behavior. In fact, traditions, beliefs, superstition, routine and false deductions keep on opposing permanently the on-going growth of this building, today cyclopic, that is scientific knowledge.

In spite of all evidence regarding the sun's immobility revealed by Galileo 300 years ago, we persist watching it rising, evolving in the sky and disappearing every single day. And it has been debated in Medical schools, for years and years, the possible influence of the zodiac signs in the efficiency of blood letting, and still today there are surgeons who do not like to perform surgeries on Friday.

Also modern society, doubting deep down that Medicine is a true science, it keeps on letting itself being influenced with delight by obscuring agents ranging from rough conman to media holders, powerful enough to deform both their smaller failures as their biggest successes.

But the modern doctor needs a persistent effort to overcome and preserve continuously a scientific mind enabling him to position himself above the daily professional practice of a mere routine manager.

This means, on one hand, to adopt permanently a scientific approach and a reasoning logic, without falling in false deductions or in the deception of erroneous or insufficient personal experiences. On the other hand, to keep track of the constant medical progress, continuously taken from cell, molecular and structural biology, from genetics, immunology, biophysics, pharmacology, diagnosis techniques, psychology, sociology and even from economics.

The aptitude for the acquisition and storage of information correspond, at present, to a hard task, but it constitutes undoubtedly the main quality of every doctor. Without appropriate information, all other qualities, as patient's dedication, human contact, diligence, clinical shrewdness, judgment and technology

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skills, can become totally frustrated and useless.

I am deeply convinced that a huge part of failures happening during medical practice, have as a fundamental explanation, neither negligence nor misinterpretation but actually deficient information.

Such deficiencies that doctors are not responsible for on their own, as there are also Health Organizations, including most Hospitals, have not invested adequately in information strategy availability for the respective clinical bodies.

Clinical investigation aspects

The total fulfillment of a doctor whilst a clinician requires a natural disposition and awareness for research activities apart of a scientific mind and a deep interest in information and its appropriate practical application.

It is an old and comprehensive controversy raised about us, what research we can and should wish to have and to keep.

The most defeatist or pretentiously ironic evoke invariably our impossibility of producing state of the art research due to a lack of material means and funds compatible with such goal. In fact, such race, reserved to countries with a higher economic and technological capacity, has been practically inaccessible to us. In such a way that we can even think that if others discover everything, why should we worry!?

Nevertheless it has been forgotten the crucial goal of research are not immediate material results. What features and identifies researchers of all latitudes are the exemption and purity of objectives, specific to an innate intellectual tendency to the experimental analysis and to the fruition of the scientific phenomenon.

Thus Pulido Valente arguable attitude when sarcastically said "In my Service, nobody has ever discovered anything, nor would I let that to happen". Such frame of mind is certainly the reason why, in spite of his strong personality, he did not leave more than a myth, created by his own staff, as happened to so many others among us.

A totally opposite destiny, of a glorious and lively trajectory, had Corino de Andrade a humble neurologist in Santo Antonio Hospital, in Oporto, owing such skills of aptitude for information, scientific methodology and curiosity, who enabled him, through purely clinical means, to isolate a new pathological entity, having served mankind well lifting himself and his

country to an unusual international prestige.

To claim that it was another time, when it was still possible to isolate new diseases, it is not a justification for a negative attitude.

It is evident that in countries with a higher research development, the very clinical centers are the first to develop the practical application of more recent technologies. However, in spite of the new techniques always arriving to us rather late, they can often enable original applications in our clinical environment.

I will refer to one, among endless examples I could quote:

At the time that among us, iodine was given to populations with endemic goiter, it was possible to Prof. Luis Sobrinho to identify a T4-toxicosis because in other countries T4 dosage was not made when iodine supply started.

There are many others research poles, as the clinical, ecology and sociology areas, perfectly within our scope and different from bioscience strategies, reserved to the basic research centers which are technically very advanced consuming huge amounts of money and not always with matching benefits.

And this was the point I wanted to make. The main research tool in such areas is epidemiology.

Epidemiologic research

Epidemiology, defined as the discipline studying models of disease occurring in population strata, through statistic methods, in spite of having already been deemed as a "low science" got Medicine richer and keeps on enriching it, with amazing contributions. At the beginning of the century both at national and international level our Country has pioneered studies in infectious epidemiology with Ricardo Jorge as a main driving force.

Afterwards, we remained inexplicably away of such motivation, in spite of a huge accumulation of the most diverse pathologies, mainly in Central Hospitals, which would have enabled us, with a minimum of predisposition, to have a place, albeit humble in this train that for several decades carries continuously the most valuable acquisitions.

Having spent 9 years of my career in Lisbon Civil Hospitals I am a witness of the unexplainable disregard regarding clinical research with some honorable exceptions practicing in those days. Such disregard was translated in the general non existence of pathologies records, casuistic studies or the publication

of original works, which were not even required in curricular documents.

It is possible that the leadership of minds of an obsolete elitism, in focus in those days, apart of a general passivity, where I am included, has been widely responsible for keeping such devastating scenario.

Our clinical means have gone, from the 80ties, from this nihilist attitude to a stage of a real “furor publicans”, often without complying with a minimum of quality and accuracy, as in a desperate attempt of each and every one to offset the humiliating apathy shown by the previous generation.

Perhaps, because of that, it is the time to stop for while, meditating and recovering such strictly scientific mind that no doctor can do without.

Clinical epidemiology is a branch of medical science, essentially based in statistics, and therefore of mathematical basis. Any physician aiming epidemiological research must know as widely as possible its grounds, but can hardly aspire to handle it, without the help of a statistician. The same way, the statistician will feel frustrated without a practical application of his expertise. Thus, as for other medical areas, team work is crucial.

There are wide horizons of intervention for such cooperation especially in the study of pathological prevalences and its correlations with decisive factors, both at regional as national level, or in multicentre studies of international scope, as it is happening all over, even among us.

Communication practice

If clinical research studies rely almost always in team work, its oral or written presentation is of an individual nature in most cases.

The capacity of adequate performance of such activities is only achievable when complying with standard rules and through a lot of practice and persistence, besides some individual propensity.

If the works published in our clinical environment did not have other merits, they had at least the virtue of improving the clinical efficiency in the practice of scientific communication, quality that being a non-questionable requirement of a modern physician, still is a prerogative of a very limited few. This happens in such a frequent way among us that some people rises to positions of management of medical careers with works of cooperation but without an individual proven track in interconnected areas of information,

research and communication, opposing undoubtedly the desirable differentiation of our healthcare areas.

As a final note, I am issuing the challenge that such differentiation does not have in the future, a minor requirement at all levels of national careers, other than being up to the task of representing the Country with dignity and sobriety in all international forums that might be required. ■