



EDITORIAL

Research in pediatrics nowadays[☆]



La investigación en pediatría a día de hoy

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If we accept that there are two main classes of investigation: *basic* and *applied*, the first one has a leitmotif that is knowledge for its own sake, frequently with no obvious or immediate application (biochemical mechanisms, cell function, etc.). Basic investigation by its definition in a vast majority of cases falls outside our present field of pediatrics that is mainly addressed to specific clinical problems clearly representing applied research.¹ It is important to consider that basic gains will lead to applied gains later on. Basic and applied (which we will now call clinical) are not separated and most of the time they are connected through a third class more recently termed as *translational* research. It is playing a very important role because of its interaction with both basic and clinical. We do not need to say that each of them has their own actors, their own subjects and their own designs. Once, this formal scheme is put into practice, things become more complex. First, there is no clear border among them. Secondly, the actors can play their part in both of the neighboring types. Thirdly, the institutions that host investigation programs have different aims and ideas about research classes.

If we now consider pediatrics and taking into account its setting in the occidentalized world we can see that the care structures (primary to tertiary) seldom have the required machinery to assess a basic law of nature or its deviation. In a few sectors of each country, this may be possible, for example, Universities and Institutes financed by governments are normally sites where this can happen. The journal *Pediatric Research* reflects in part this activity. This is the reason why pediatrics following the general trend in clinical research tends to certain subtypes. One subtype is based on the development of new diagnostic and therapeutic procedures and another is based on the evaluation of efficacy and safety of new treatments. This part (also known as clinical trials) has proved to be very useful after evidence based techniques are used. It is pertinent to mention here how reviews are regulated also by these techniques and search strategies.

Part of this clinical research is the epidemiological studies that sometimes are considered as a new branch of research, they have the advantage that with a good design and a vigorous execution, they can be put in practice at primary care level. Retrospective clinical studies are not considered as real research.

The freedom to choose subjects has been and is an inherent characteristic of research. Therefore the variety of lines can be infinite, but if a pragmatic sense is present at the time of deciding the research object the present hot points should be considered. I would like to refer to the five

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points of concern stated by CDC,² particularly because they have a particular significance for the near future. They are: *Antibiotic Resistance and Advanced Molecular Detection*; *Preventing Prescription Drug Abuse and Overdoses*; *Global Health Security*; *HPV Vaccination*; and *Poliomyelitis*. These topics would be the focus of interest in pediatrics. Each item could be expanded according to the facilities of each team as for example the study with an epidemiological base on global health on maternal, newborn and child carried out by the Canadian group led by Z. Bhutta.³ Also the one from the Institute of Child Health (London) led by Prof. T.J. Cole⁴ on longitudinal growth of preemies below 32 weeks of gestation with a pure clinical base with minimal intervention. A new research field with growing acceptance is literature search. Archibald Cochrane is firmly connected with this important source of real knowledge that can be applied to the management of clinical problems. During his participation in the Spanish Civil War in the British Ambulance Unit his advocacy for the randomized controlled trials was probably initiated. That was the origin of the present Cochrane Library database of systematic reviews. The unavoidable search strategy quoting the bibliographical resources, the obtained references in each one, the type of search, the keywords and limits used is now a standard tool for an interested person or pediatric group. The examples of meta-analysis or systematic reviews have been plentiful and helpful.

Clinical trials in pediatrics merit special mention due to the use of new medicines normally designed for adult treatments or for off-label use. The European Medicines Agency (EMA) through its Pediatric Committee (PDCO) 'is assessing the content of pediatric investigation plans and adopting opinion on them' among other important tasks, one of which is to advise Member States on the content and format data to be collected for surveys on the uses of medicines in children.⁵ These rules must not be forgotten when participating in a multicenter study.

Finally I would like to refer to the barriers for research. The first can be the attitude of responsible persons of pediatric departments which is perhaps influenced by the present R&D restrictions. Consequently this is focused

more in clinical care or academic tasks. A simple way to estimate this research is if in the previous two years they have been a publishing author or grant applicant. The second is related to the skepticism generated by some drug development studies without clear or appropriate objectives with research participants either ill- or un-informed. The third barrier is the journals' reasonable interest in publishing only the best submitted articles, they as consequence promulgate every year the percentage of rejected manuscripts. Yet, undoubtedly those rejected manuscripts contain valuable research. This uncertain threshold has a discouraging effect for researchers.

Despite these obstacles that should be known by researchers, our present situation is somewhat optimistic. For instance the presence of Spanish pediatricians as authors in the international panorama is nothing but growing. If we consider the content of *Anales* of 20 years ago with the present one, positive differences are clear as well as the steady growing impact factor of our journal. Therefore young and senior pediatricians are asked to continue in this track because the benefits of research remain a central consideration in health care.

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