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ΦΙΛΟΣΟΦΙΑ

The Emperor's new clothes in nephrology
Past and present

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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2020, 37(Συμπλ 2):85–88

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Τα καινούργια ρούχα του αυτοκράτορα στη Νεφρολογία: Παρόν και παρελθόν

Περίληψη στο τέλος του άρθρου

Evidence-based Medicine has been described as the integration of information from best available evidence with the doctor's experience and the patient's point of view. If it is replaced by Guidelines-based Medicine it resembles the Hans Christian Andersen's fairy tale the "Emperor's New Clothes" where the Emperor (our Healthcare) is naked and nobody dares to cry it out. History has made circles since "Authority" based Medicine of the Past has been replaced by "Guidelines", if followed blindly. We searched for such examples in the Past and the Present in the field of Nephrology. Galen's and Aristotle's sayings were not contradicted by their successors, in the "shadow" of their prestige and their "Authority», even though ironically both actively encouraged experimentation and the questioning of established theory. In the present treatment of hyperphospatemia with Phosphate binders and dyslipidemia with statins in Dialysis patients are two examples where in clinical practice the doctor and the patient are not in the centre of the decision process. In conclusion we should hear the voices that cry out "the Emperor is naked" and as a recurring historical cycle turn to Hippocrates' Oath ordering us to apply the best possible treatment to our patients.

Key words

Emperor New Clothes' syndrome
Evidence based medicine
Nephrology

1. INTRODUCTION

The Emperor' New Clothes' Syndrome, based on the tale by the Danish writer Hans Christian Andersen (1835), first described by Gross F,[1] can be considered as a parody of the way we currently practice Medicine. As Tebala GD stated "The Emperor is healthcare, the way we treat our patients. His 'new clothes' are what we consider modern Evidence-Based Medicine (EBM). Ministers and knights – and the crowd gathered for the procession – are those who pretend to practice the best up-to-date medicine. The innocent young kid represents the whistle-blower of a potentially failing system".[2] Scientists often do not challenge data with which they might not agree, or conclusions that are perhaps overblown or overstated for various reasons. In that sense "modern" EBM is equivalent to Guidelines-Based Medicine where doctors are gradually becoming only passive executors of someone else's decisions. Modern Healthcare is dangerously heading back to "Authority-based Medicine", i.e. based on a leader as in the ancient science.

1.2. Aim

We aimed to search for examples of the syndrome of "The Emperor's new clothes" in the field of Nephrology from the past and the present, in order to find reasons and possible solutions. "Present" is defined as Medicine from the 19th century onwards. At that time, the "Germ theory of disease" by Robert Koch and Louis Pasteur marked the beginning of "Modern Medicine" and a shift from "patient-centred" to "evidence-based" medicine.

2. RESULTS

Past: Aristotle (384-322 BC) challenged the method of teaching biological sciences based on theories. He strongly suggested using direct observation via experiments and dissections and opposed the aversion to them. Nevertheless, he made some "mistakes" based on his observations.[3,4] He incorrectly observed the absence of kidneys in fish and birds and deduced that they were not essential for the existence of a living organism. He stated that the kidneys are "assistants" to the work of the bladder: "pre-purify the blood and send the filtrate to the bladder where it is turned to clear urine and excreted". He believed that "the aorta sends similar branches to each kidney, but none to the liver or spleen", and that "the kidneys also lie in the same position in all creatures that possess them" (study on a dead cow).

Galen (130–210 AD) was the father of the experimen-

tal method. He dissected animals in his quest to understand how the body functions. He regarded medicine as an interdisciplinary field best practiced by using theory, observation, and experimentation in conjunction. Galen challenged his students and anyone else to conduct the same experiments in order to check the accuracy of his observations. "For I have already shown thousands of times the twin (organs) that intercede the spermatic cords from the outer horns to the inside of the uterus (…). And this must be shown by anyone (that follows the same experimental method) after I and my pupils have died". Despite the above, he made some mistakes based on his observations, which persisted because of his "authority".[5] He described Diabetes as a disease specific to the kidneys because of a weakness in their retentive faculties. Matthew Dobson (1732–1784) showed that "sweet" urine was so because it contained sugar and was preceded and accompanied by sugar in the blood. Although diabetes then came to be ascribed to increased sugar in the blood, the presence of sugar in urine continued to be attributed to the decreased retentive properties of the kidneys. Galen's medical works were regarded as authoritative until well into the Middle Ages. Galen left a physiological model of the human body that became the mainstay of the medieval physician's university anatomy curriculum, but it suffered greatly from stasis and intellectual stagnation as some of Galen's ideas were incorrect; he did not dissect a human body.[6] Greek and Roman taboos meant that dissection was unusual in ancient times, but in the Middle Ages this gradually changed.[7]

2.1. Present

The patient is regarded as a cluster of different diseases - each demanding a specific treatment, governed by "guidelines" from expert committees. In Nephrology, this task is covered by the Kidney Disease Improving Global Outcomes (KDIGO) initiative, founded in 2003 to fulfil a need for international cooperation and consolidation in the development and implementation of clinical practice guidelines.[8]

Regarding hyperphosphatemia, the KDIGO 2017 update states:[9] "In patients with CKD G3a-G5D, we suggest lowering phosphate levels toward the normal range (2C)". "In patients with CKD G3a-G5D, we suggest limiting dietary phosphate intake in the treatment of hyperphosphatemia alone or in combination with other treatments (2D). It is reasonable to consider phosphate source (e.g. animal, vegetable, additives) in making dietary recommendations (not graded)". The article states that decisions about a phosphate-lowering treatment should be based on progressively or persistently elevated Serum Phosphate (Ph) (not graded). This emphasises the perception that early "preventive" Ph-lowering treatment is currently not supported by data. The broader term "Ph-lowering treatment" is used instead of Ph binding agents since all possible approaches (i.e. binders, diet, dialysis) can be effective, Ph migration from bone may contribute to serum levels. In a review article,[10] Professor Vervloet states that "It is difficult to establish when an intervention should be considered as a "preventive" or as a "therapeutic" measure, as hyperphosphatemia is not a disease.

Despite the "suggestion" and the accompanying "low quality of evidence" for the use of phosphate binders in the CKD population, in the real world the corresponding pill burden (average number 19) represents a major burden for patients[11] and the Health Care System.[12]

Regarding dyslipidaemia, in the general population statins are a mainstay in the secondary prevention of atherosclerotic cardiovascular disease.[13] The relative decrease in cardiovascular risk by statins diminishes as kidney function declines, even after allowing for the smaller reductions in LDL cholesterol obtained in more advanced CKD. In patients on maintenance dialysis, several large randomised trials and high-quality meta-analyses revealed that statins have little or no effect on cardiovascular outcome, despite significant LDL cholesterol lowering.[14] These counter intuitive findings have been attributed to the poor association of LDL cholesterol with cardiovascular risk in the dialysis population, owing to the predomination of non-traditional risk factors (e.g., mineral and bone metabolism disorder and oxidative stress) and non-atherosclerotic cardiac events (e.g., arrhythmia and heart failure) drowning out classic atherosclerotic disease.[15]

The 2014 Kidney Disease Improving Global Outcomes Lipid Work Group suggests that statins should not be initiated in patients on dialysis, but that statins can be continued in patients already receiving them at the time of dialysis initiation.[16] Despite the proven lack of meaningful gains and concerns about costs, polypharmacy and side effects, statins are currently still widely prescribed to patients on dialysis and viewed as safe and effective agents by most nephrologists.[17] A recent observational study in patients on RRT revealed that the use of statins correlated with a higher baseline coronary artery calcification (CAC) score, independent of age, sex, and diabetes, as well as a more rapid progression of the CAC score in a longitudinal evaluation compared to no treatment with statins.[18]

3. DISCUSSION

Hippocrates (460–370 B.C.) is considered the Greek

Father of medicine, who began the scientific study of Medicine. He instructed doctors to review and analyse all existing data before embarking on any research. This method of Inquiry being "the only acceptable way of finding answers in medicine, as it helps physicians with good training and an inquisitive mind to focus their attention on what had not been discovered". This clear Hippocratic instruction brings to mind today's call for systematic reviews. But at the same time Hippocratic doctors considered each person to be unique and therefore adapted their advice paying attention to the characteristics of each person (age, gender, appearance and physique) their daily habits, the place they lived in and the season of the year. They were helped to decide on their prescribed treatment by their past experience on treating similar cases.[19]

In ancient times, Galen's and Aristotle's sayings were not contradicted by their successors, in the "shadow" of their prestige and their "Authority". There is a great irony in Galen's and Aristotle's posthumous fate. Although they actively encouraged experimentation and the questioning of established theory, those who followed were prohibited from questioning theirs. They went so far as to claim that the human body had changed over the centuries, accounting for the dissimilarity.

The first clear definition of Evidence-Based Medicine (EBM) comes from the late Professor Sackett: "Evidence-based medicine is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. The practice of evidence-based medicine means integrating individual clinical expertise with the best available external clinical evidence from systematic research".[20] But as Professor Ioannidis states "Evidence-based medicine has been hijacked". In many places, medicine and healthcare are wasting societal resources and becoming a threat to human well-being. Science denialism and quacks are also flourishing and leading more people astray in their life choices, including health. EBM still remains an unmet goal, worthy to be attained.[21]

Now, there are voices implying a form of judgment in the interpretation of Guidelines. Regarding Hyperphosphatemia in CKD,[10] as Vervloet states "Presently there is no definite proof of a beneficial effect of phosphate lowering on patient-level outcome. Moreover, both dietary intervention and phosphate binder therapy may have side effects. Despite these limitations, treating hyperphosphatemia in CKD still appears appropriate but should be paralleled by ongoing research to further underpin this approach and improve therapeutic strategies".

Regarding Dyslipidaemia treatment with statins in CKD and in particular in dialysis patients, the evidence supporting a beneficial effect of statins in patients on dialysis is moot, but this has not discouraged physicians to prescribe these drugs. However, as Professor de Vriese suggests the insight that statins potentially accelerate vascular calcifications in patients on dialysis may persuade nephrologists to ban statins from dialysis, pending hard data to supersede these assumptions.[14]

In the tale "The Emperor's new clothes", the emperor and courtiers were silent because they feared being revealed as stupid or incompetent. This attitude has been described 2400 years ago by Aristotle, who in his "Rhetoric' stated "But the hearers also are impressed in a certain way by a device employed *ad nauseam* by writers of speeches: "Who does not know?""Everybody knows"; for the hearer agrees, because he is ashamed to appear not to share what is a matter of common knowledge. (Aristotle, Rhetoric 3.7).

4. CONCLUSIONS

"Authority-based Medicine" is being substituted by "Guidelines-based Medicine" if the patient and the treating physician are not in the centre of the decision making process. We should hear the voices that cry out "the Emperor (our Healthcare) is naked" and as a recurring historical cycle turn to Hippocrates saying "make a habit of two things-to help or at least, to do no harm".

ΠΕΡΙΛΗΨΗ

Τα καινούργια ρούχα του αυτοκράτορα στη Νεφρολογία: Παρόν και παρελθόν

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Η Ιατρική βασισμένη σε αποδείξεις έχει περιγραφεί ως η συγχώνευση της καλλίτερα τεκμηριωμένης πληροφορίας με την εμπειρία του ιατρού και την προσωπική άποψη του ασθενή. Αν αντικατασταθεί από την Ιατρική των «Κατευ-

θυντήριων Οδηγιών» προσομοιάζει με το παραμύθι του Χανς Κρίστιαν Άντερσεν «Τα καινούργια ρούχα του Αυτοκράτορα» όπου ο Αυτοκράτορας (Σύστημα Υγείας) είναι γυμνός και κανείς δεν τολμάει να το φωνάξει. Η Ιστορία έχει κάνει κύκλους καθώς η Ιατρική βασισμένη στις «Αυθεντίες» του Παρελθόντος έχει αντικατασταθεί από τις «Κατευθυντήριες Οδηγίες», όταν αυτές ακολουθούνται τυφλά. Ερευνήσαμε παραδείγματα στο πεδίο της Νεφρολογίας στο Παρελθόν και στο Παρόν. Τα αποφθέγματα του Γαληνού και του Αριστοτέλη δεν αμφισβητήθηκαν από τους διαδόχους τους, στην «σκιά» της «Αυθεντίας» τους, παρόλο που ειρωνικά και οι δύο ενεργά ενθάρρυναν τον πειραματισμό και την αμφισβήτηση των καθιερωμένων θεωριών. Στο Παρόν η θεραπεία της υπερφωσφαταιμίας με δεσμευτικά του φωσφόρου και της δυσλιπιδαιμίας με στατίνες σε Αιμοκαθαιρόμενους ασθενείς αποτελούν δύο παραδείγματα όπου στην κλινική πράξη ο ιατρός και ο ασθενής δεν είναι στο κέντρο της θεραπευτικής απόφασης. Συμπερασματικά θα πρέπει να ακούμε τις φωνές «ο Αυτοκράτορας είναι γυμνός» και σε έναν επαναλαμβανόμενο ιστορικό κύκλο να επιστρέψουμε στον Όρκο του Ιπποκράτη.

Λέξεις ευρετηρίου: Ιατρική βασισμένη σε αποδείξεις, Νεφρολογία, Σύνδρομο «Τα καινούργια ρούχα του Αυτοκράτορα»

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