



Laboratory and precision medicine: the reasons for the birth of a new journal

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Received: 02 November 2016; Accepted: 02 November 2016; Published: 07 November 2016.

doi: 10.21037/jlpm.2016.11.02

View this article at: <http://dx.doi.org/10.21037/jlpm.2016.11.02>

According to the US National Institute of Health (NIH) precision medicine (virtually equivalent to the concepts of personalized or person-centred medicine) can be actually defined as “an emerging approach for disease treatment and prevention, which takes into account the individual variability in genes, environment, and lifestyle for each person” (1). This modern view of science and medicine is at odds with the conventional model “one-size-fits-all”, which has been used for centuries for delivering treatment and prevention strategies sized on average persons, so basically overlooking the importance of demographic, ethnic and lifestyle differences between individuals.

Given for granted that precision medicine is a rapidly growing enterprise in the entire healthcare industry, the obvious question that whoever may spontaneously beg regards the nature of the link between laboratory and precision medicine. Paradoxically, the connection between personalized (precision) medicine and laboratory diagnostics is even stronger and sharper than with other medical disciplines, wherein the diagnosis and especially the therapeutic management and prognostication of a kaleidoscope of human disorders are increasingly based on individual laboratory data (2). Although cancer is ranked second among the leading causes of mortality worldwide, its prevalence has not substantially declined in the past decade, so closely approximating the current estimates of the death rate for cardiovascular disease around the globe. Despite an increasing focus has been placed on prevention and early diagnosis of malignancies, laboratory diagnostics is somehow hamstrung by the actual panel of genetic, epigenetic and other circulating biomarkers, the efficiency of which still appears quite limited, as recently proven by the failure of breast cancer susceptibility gene (BRCA)

genetic testing programs (3). Nevertheless, the increasing discovery and introduction into clinical practice of a large number of innovative drugs tailored to modulate biological pathways rather than undifferentiated disease treatment are disclosing intriguing scenarios. Unlike deregulated screening, the targeted assessment of BRCA mutation status may provide valuable information for driving treatment and prognosticating breast cancer (4). Similar conclusions can be made for the assessment of human epidermal growth factor receptor 2 (HER2) in both tissue and plasma, a valuable aid for targeted therapy of breast cancer (5).

Despite the many promises of precision (laboratory) medicine for improving health outcomes and optimizing healthcare expenditures, this diagnostic branch is still in embryo, and a number of drawbacks and unresolved issues remain (6). Some of these have been recently summarized in a position paper published by the European Association for Predictive, Preventive and Personalised Medicine (EPMA), which raised important issues pertaining to ethical aspects about privacy and security of data management, the strength of national and supranational regulations, the adequacy of protocols for collecting, storing and retrieving biological samples, as well as the standards of analytical quality for obtaining genetic, epigenetic and other laboratory information (7).

The expectation of the Editorial Board of *Journal of Laboratory and Precision Medicine (J Lab Precis Med; JLPM)* is that this journal may shortly become a valuable platform for exchanging information in the multidisciplinary arena of precision laboratory medicine data. Specifically, *J Lab Precis Med* will offer an open access, peer review, online platform for publishing both solicited and unsolicited manuscripts aimed to reporting

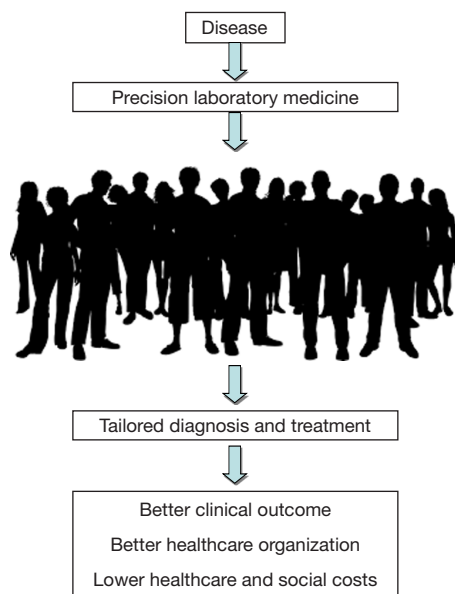


Figure 1 The paradigms of precision laboratory medicine.

new findings in this field, so providing current, practical information on laboratory and precision medicine. Hopefully, these publications will catalyze improvements and generate a useful milieu for patient management, healthcare organisation and economy (*Figure 1*).

Acknowledgements

None.

doi: 10.21037/jlpm.2016.11.02

Cite this article as: Lippi G, Montagnana M. Laboratory and precision medicine: the reasons for the birth of a new journal. *J Lab Precis Med* 2016;1:3.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

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