Advancing implementation in pharmaceutical industry and future perspectives.

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Abstract

Pharmaceuticals enhance our quality of life; consequently, their consumption is growing as a result of the need to treat ageing-related and chronic diseases and changes in the clinical practice. The market revenues also show an historic growth worldwide motivated by the increase on the drug demand. However, this positivism on the market is fogged because the discharge of pharmaceuticals and their metabolites into the environment, including water, also increases due to their inappropriate management, treatment and disposal; now, worldwide, this fact is recognized as an environmental concern and human health risk. Intriguingly, researchers have studied the most effective methods for pharmaceutical removal in wastewater; however, the types of pharmaceuticals investigated in most of these studies do not reflect the most produced and consumed pharmaceuticals on the market. Hence, an attempt was done to analyse the pharmaceutical market, drugs consumption trends and the pharmaceutical research interests worldwide.

Introduction

The pharmaceutical industry plays an active role in policy surrounding the research, discovery and development of new medicines. Along with this commitment, the pharmaceutical industry must also take an active role in helping to ensure the various players involved in drug development and introduction, including the pharmaceutical industry, clinicians, advocacy groups and regulatory bodies, need to work together to ensure patient access to quality care [1]. While issues such as drug acquisition costs and marketing are often given a high profile, this may cloud perceptions of the industry's commitment to deliver important new medicines to the patients and healthcare systems that need them. Notwithstanding, the intensive research work done in different pharmaceutical research fronts such as disposal and fate, environmental impacts and concerns, human health risks, removal, degradation and development of treatment technologies, found that such research is not totally aligned with the market trends and consumption patterns [2].

In addition to the pharmaceutical market, pharmaceutical consumption worldwide was also growing, partly driven by a growing need for drugs to treat ageing-related and chronic diseases and changes in clinical practice. Consumption of cholesterol-lowering drugs had nearly quadrupled, use of antidepressant drugs doubled and consumption of antihypertensive and antidiabetic drugs nearly doubled in Organization for Economic Cooperation and Development (OECD) countries between 2000 and 2015. Demand for local and imported pharmaceutical products increased as economies grew, and healthcare provision and insurance mechanisms expanded. Not only was demand increasing, but also the diversity of pharmaceutical needs as emerging markets increasingly address Non-Communicable Diseases (NCDs) already prevalent in stronger economies, including diabetes and hypertension, while communicable diseases that afflict many emerging markets such as acquired immunodeficiency syndrome, malaria and tuberculosis persist. The increase in the global population is also contributing to pharmaceutical consumption [3].

Despite the intensive research work done worldwide in different pharmaceutical research activities such as disposal and fate, environmental impacts and concerns, human health risks, removal, degradation and development of treatment technologies, the consumption trends, the fatal disease incidence rate and disease burden in the population with respect to the different pharmaceuticals research fronts. Therefore, this paper addresses and discusses the current pharmaceuticals market, the pharmaceuticals consumption trends, the diseases of incidence, and their relationship with the different pharmaceutical research fronts with the aim of finding the drivers and interests that motivate and promote the research on pharmaceuticals [4].

Additionally, a review of the legislation and regulations available worldwide related to the treatment and disposal of pharmaceuticals into the environment was conducted.

The study reveals a growing global pharmaceutical market, a continuous increase of pharmaceutical consumption and an intensive research work on different pharmaceuticals fronts; however, such research is not totally aligned with the market trends and consumption patterns. Furthermore, the legislation and regulations available do not address the treatment and disposal of emergent contaminants, such as the pharmaceuticals; neither these legislations nor regulations promote incentives in favor of the pharmaceutical industry to generate new drugs that can provide adequate treatment for the patient, but also that the drugs have to be friendly to the environment under a philosophy of green chemistry [5].

Conclusion

As a general overview, this work presents that the indicators in the pharmaceutical industry are revenues from drug sales and this has caused an exorbitant consumption by people. As a result, there is a rise in the consumption and sales where there are no effective restrictions to avoid self-prescription, or medical doctors themselves are not having a concern that their patients should consume fewer drugs to treat the same diseases. Therefore, the economic system has governed the priority in profits and not the concern about developing policies to have an economy respecting the sustainability of producing green chemistry drugs, or reducing the risk of exposure of drugs in water by studying more the toxicity of them or by adding more regulations on wastewater discharges by the governments.

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