



Novel Migraine Therapies May Reduce Public and Personal Disadvantages for People with Migraine

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Abstract

The introduction of new drug classes for migraine, such as monoclonal antibodies that target the calcitonin gene-related peptide (CGRP) or its receptor and small-molecule antagonists of CGRP, have opened a new scenario in a large population of individuals suffering from migraines. The provision of an effective and safe therapy can help overcome the high social and personal costs together with the burden of this disease by offering social, work and economic recovery to the people affected by migraine. Whether the satisfaction of personal and collective unmet needs will be achieved in the vast majority of migraine sufferers now depends only on the efficiency of the organizational care structures dedicated to this socially impactful disease. This path will offer personal benefits and significant psychosocial relief that will help to reduce the enormous current healthcare expenditure necessary for the management of the huge number of individuals suffering from migraines. The new pharmacological classes for prevention must be applied as an interdiction to the chronic phase to express their full rehabilitation potential.

Around 12% of the global population have migraines, summing up to almost a billion patients. Those with the chronic form, about 2–3% of patients, face the highest direct and indirect costs of the disease. Direct costs primarily stem from frequent consultations, therefore more frequent hospital visits, coupled with greater inappropriate diagnostic exams and prescription drug use, while indirect costs arise from social isolation and failed job opportunities [1–5].

The cost of migraine is growing and will continue to grow, as a result of intense education campaigns revealing previously undiagnosed clinical situations and the availability of new pharmacological classes with proven safety and efficacy, as reviewed in the article by Cohen et al. in this issue of *BioDrugs* [6, 7].

The recent introduction of preventive drugs engineered against calcitonin gene-related peptide (CGRP), including monoclonal antibodies to the CGRP itself or its receptor, and CGRP antagonists, has benefited only a minority of these patients with high-frequency or chronic migraine, with

prevention of pharmacological resistance or refractoriness opening up for them a health, social and productivity perspective not possible and imagined before with the existing standard of care (SOC) [8, 9].

This natural and progressive evolution of individuals with migraine towards chronicity or drug resistance and refractoriness is nowadays efficaciously reversed by using CGRP(r) monoclonal antibodies, rightly defined as disease-modifying migraine drugs [10].

The question we must face today, beyond the indisputable universal and ethical-social value of public health in Europe, is whether or not national health systems can bear the costs of these innovative therapies on the basis of parameters that go beyond the concept of savings, combined with the distributive equity of health resources to ensure the satisfaction of unmet needs in the field of public health dedicated to chronic diseases [11–13].

Chronic migraine must also be considered as one of the various chronic diseases that can occur in the same individual, in a comorbid way or by simple co-occurrence, e.g. comorbid migraine with depression or obesity, and co-occurrence with asthma, diabetes or other diseases [14]. In this context, it should also be considered that the coexistence in the same individual of several comorbid chronic diseases that are not adequately treated favours the concept of the irreversibility of the chronicity trend with all that follows—burden, disability, cost and job inequalities [3, 15, 16].

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We should furthermore consider the necessary but disproportionate health care disparity that has arisen with the coronavirus disease 2019 (COVID-19) pandemic, penalizing the management of chronic diseases, including migraines. This situation is now progressively recovering through the application of new healthcare approaches [17].

The immense direct and indirect costs associated with chronic migraine have already been mentioned. Taking a closer look, direct costs are related to prescriptions, diagnostic examinations, access to emergency departments, products and services, while indirect costs are related to the effects that chronic migraine has in other aspects of life such as mobility, employment, social and emotional well-being [3–5, 18]. Since prescription drug costs are significantly higher for chronic migraine sufferers, and SOC often leads to multiple prescriptions with the danger of harmful interactions [19], changing treatment practices to choosing the novel preventative drug classes (CGRP_r) monoclonal antibodies or gepants) could significantly improve treatment adherence, reduce the complications and, therefore, costs [20–22].

The disabilities associated with, and the monitoring required for, chronic migraine can be socially debilitating for many. Chronic mental and physical conditions can lead to harmful degrees of social isolation. Acute drug overuse resulting from the poor efficacy of SOC may lead the individual with migraine to a situation of improper use of acute drugs, often resulting in the development of dependence on them [23]. Also, the use of combination/add-on therapy could become redundant and, therefore, be eliminated in favour of the new-generation, innovative drugs [24].

The costs of these new drugs can be considered high in principle when compared with SOC. However, if considered in the light of their effectiveness in reducing the frequency and intensity of crises and in improving the overall economic, personal and social framework and productivity of the individual, it can rightly be seen as an opportunity for rehabilitation from a chronic disease, together with an overall saving in economic terms. These assumptions should favour the sustainability of these innovative therapies in an increasingly large proportion of migraine sufferers.

On the basis of these human and social considerations and economic evidence, a non-restrictive application of the new migraine prevention drugs must be hypothesized, considering their use as a first-line treatment in patients who present a consolidated progression towards the chronic phase, so as to compensate for the greater expense needed for their care with increased work productivity, resulting in a net reduction in general health costs previously incurred by the community as a whole and by people with migraine [25].

Finally, intercepting the chronic phase and preventing the evolution to resistance/refractoriness of migraine can generate a sort of social and personal economic added value. This,

while guaranteeing the well-being of people with migraine, leads to the passing of those silent barriers that are intrinsic to any public health system based on universality [26].

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