New cancer drugs: too many unknowns

Persistant lack of data on survival benefit.

We expect a lot from new cancer drugs: that they should extend the duration and improve the quality of patients' lives. But what is the reality?

In Europe, one study had shown that from 2009 to 2013, out of 68 cancer indications for 48 drugs authorised on the advice of the European Medicines Agency (EMA), 44 had been authorised without any proof of survival benefit. For 42 indications, about 3 years after market entry, there was still no proof of improvement, either in the duration or quality of life (1). A new study, involving collaboration between various Austrian health authorities, extended the analysis to 102 cancer drugs marketed in Europe between January 2009 and May 2015 (2). For 38 of these drugs, there was no information regarding survival at the time of marketing authorisation, and for 5 drugs, there was even a reduction in survival duration. For 38 of these drugs, at least three years after their approval, 27 new trials were available. A survival benefit was observed with only 14 of the drugs (2).

This study confirms the results of many other studies (3). In the United States, a study was carried out on 54 cancer drugs authorised by the US Food and Drug Administration between 2008 and 2012 (4). 36 out of 54 were authorised without any proof of survival gains, including all 15 drugs authorised via an accelerated procedure. After about 4 years of follow-up, only 5 out of 36 drugs had been shown to prolong survival in a trial. The trials did not show any gains in survival for 18 drugs, and the effects on overall survival were still not known for 13 drugs (4). The authors from the Austrian team are of the opinion that cancer drugs for which no survival benefit has been shown several years after marketing authorisation should be withdrawn (2). Have their voices been heard? In April 2019, the EMA officially withdrew *olaratumab* for this reason (5). Since this drug was withdrawn for lack of efficacy, it should be the first in a long series! The EMA must be encouraged to follow this path, thus protecting human health and healthcare budgets. However, above all, it must demand more robust evaluation of drugs before marketing authorisation. In this way, it would avoid exposing patients to the adverse effects of drugs with no value, and avoid squandering public resources through unjustified expenditure.

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Cancer drugs: very profitable for drug companies

For every dollar invested in research and development, there is a return of about 14.5 dollars.

Companies often use the substantial cost of research to justify the high price of cancer drugs (1). In 2017, a study of 10 cancer drugs showed that sales of these drugs brought in seven times more income in four years than the cost of investment in research and development (R&D) (2). A new study, this time on 99 cancer drugs approved by the US Food and Drug Administration between 1989 and 2017, reports even greater profitability: 1 US dollar invested in R&D generated a median sales income of 14.5 US dollars by the end of 2017 (ranging from 3.3 to around 55 dollars) (1).

The estimates of R&D costs in the study took into account the risk of clinical trial failure, and turned out to be comparable with pharmaceutical industry estimates. The data on income generated by the sales of the drugs was in most cases extracted from their financial reports (1).

Based on these and other results, the World Health Organization, of which the three authors of the study are members, is calling for strengthening the policies regulating cancer drug prices (1,3). A large number of new cancer drugs are sold at exorbitant prices, while most often providing only modest therapeutic benefit (2).

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