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The treatment for MS is not all that effective

OPINIONS

SIGBJØRN OLAV ROGNE

E-mail: sigrogne@online.no
Sigbjørn Olav Rogne, MD, PhD and specialist in gastroenterology and geriatric medicine.
The author has completed the ICMJE form and declares the following conflict of interest: He has multiple sclerosis and received chemotherapy with autologous stem cell support at the Careggi University Hospital in Florence, Italy, in January 2015 with good effect.

The medications used to slow down the disease are not as effective as we are led to believe. Pharmaceutical companies buy themselves influence over the treatment of multiple sclerosis.

When the Decision Forum in the autumn of 2019 decided to introduce restrictions on the use of so-called disease-modifying drugs against multiple sclerosis (MS), they met with severe criticism from the industry, neurologists and the Norwegian MS advocacy group, MS-forbundet (1–3). Multiple sclerosis is an autoimmune disease, and the disease-modifying drugs act to inhibit the immune system. It is my assertion that the disease-modifying drugs are not as effective as the industry indicates, and that neurologists are being swayed by pharmaceutical companies.

One example of buying influence can be seen in the USA. There was a multifold increase in the price of disease-modifying and other drugs compared to other countries after the Congress passed the *Medicare Prescription Drug Bill* in 2003 (4, 5). The law forbade Medicare (a public health insurance system for people older than 65 years and persons with a disability) to negotiate prices for prescription drugs with pharmaceutical companies (4).

The Congress representative Billy Tauzin received large sums of money from PhRMA (the pharmaceutical industry) and was instrumental in having the bill passed. He was later appointed director of PhRMA (6, 7).

Information on fees paid by pharmaceutical companies to Norwegian doctors is not freely available, but information communicated through the *Dagens Medisin* journal shows that a number of leading MS neurologists received large amounts in 2017 (7, 8). Patient advocacy groups, such as the Norwegian MS-forbundet, also receive funds and material from pharmaceutical companies (7).

The pharma industry's health services

The Decision Forum ruled that the hospitals should not use the disease-modifying drug ocrelizumab and that the hospitals can use rituximab off-label as a disease-modifying drug (9). Ocrelizumab and rituximab are nearly identical, and the pharmaceutical company most likely chose not to have rituximab approved as a disease-modifying drug because the patent expired in 2015 (10). A one-year treatment with ocrelizumab costs NOK 280 000, rituximab fourteen times less (10, 11).

> ***«It is my assertion that the disease-modifying drugs are not as effective as the industry indicates, and that neurologists are being swayed by pharmaceutical companies»***

The drug Campath (alemtuzumab) against chronic lymphatic leukaemia was de-registered in 2012, perhaps because it was more commercially interesting as a disease-modifying drug (12)? When it was approved as a disease-modifying drug in 2013, the price rose by a factor of 40. The first treatment costs approximately NOK 490 000 (13). The psoriasis drug dimethyl fumarate was approved as a disease-modifying drug in 2013, and the price subsequently increased tenfold to approximately NOK 150 000 per year (14). Furthermore, when the arthritis drug teriflunomide was approved as a disease-modifying drug in the same year, the price increased by a factor of twenty to approximately NOK 110 000 per year (15).

Doubtful effect

Trials show that disease-modifying drugs have a limited effect, and many MS patients gradually see that the disease takes its course (16–19). The disease causes a loss of many good years of life, and average life expectancy is reduced by 6–14 years (20–22).

Trials of chemotherapy with stem-cell support (HSCT treatment) for multiple sclerosis show clearly better results, and also that the treatment can halt the disease (17, 18). This treatment involves a relatively low risk, and mortality is < 0.3 % (17). HSCT treatment costs approximately NOK 480 000, mainly because of the need to stay in an isolation room at the hospital (23). Pharmaceutical companies create an impression that the disease-modifying drugs are so effective as to render HSCT treatment superfluous, too risky and effective only

for patients with the most aggressive disease activity, despite the fact that no trials of HSCT treatment have been conducted in MS patients with normal disease activity (16, 19, 24).

The pharmaceutical companies have created misapprehensions

In my opinion, the following *misapprehensions* held by patients, politicians and decision-makers have been caused by purchase of influence by the pharmaceutical industry:

Multiple sclerosis is not a disease that you die *from*, but *with* (20–22). Good control over the disease is now achieved with disease-modifying drugs (16, 18, 19, 22). MRI scans of the brain can disprove inflammatory activity (MRI has a limited resolution, and can only detect high degrees of inflammatory activity) (25–27). HSCT treatment is superfluous because of the disease-modifying drugs and is too risky (17–19). HSCT treatment is effective only for MS patients with the most aggressive disease activity (24).

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