Belief that more treatment is better

From: Key Concepts for assessing claims about treatment effects and making well-informed treatment choices (Version 2022)

1.3b Do not assume that more treatment is better.

Explanation

Increasing the dose or amount of a treatment (e.g., how many vitamin pills you take) can increase harms without increasing beneficial effects.

For example, iron deficiency is an important cause of anaemia and a major contributor to the global burden of disease *[Pasricha 2021 (OR)]*. Iron supplements are effective for preventing and treating iron deficiency anaemia. However, iron supplements can injure the upper gastrointestinal tract and cause nausea, vomiting, discomfort, diarrhoea, and constipation – and higher doses of iron increase the number and severity of adverse effects *[Cancelo-Hidalgo 2013 (SR)]*.

More aggressive treatment can also increase harms without increasing the benefits. For example, radical mastectomy entails removing the breast tissue along with the nipple, lymph nodes in the armpit, and chest wall muscles underneath the breast. This was the standard of care for breast cancer surgery for almost a century. But in the 1980s, fair comparisons found that a lumpectomy was an equally viable option that was far less extensive and easier on the patient, since it removed the tumour, not the breast itself *[Cotlar 2003]*.

Basis for this concept

Adverse effects of medicines are common, and they can be serious. For example, studies have found that about 7% of hospitalised patients in the U.S. have had serious adverse drug reactions and about 0.3% have had fatal adverse drug reactions *[Lazarou 1998 (SR)]*. About three-quarters of the reported side effects are dose related. Dose-related adverse drug reactions are also common in patients who are not hospitalised, and they can occur at dosages recommended by pharmaceutical manufacturers in package inserts *[Cohen 2001 (OR)]*. This occurs because those recommendations are based on incomplete information and sometimes do not reflect research showing that a lower dose would be better *[McCormack 2011]*.

Millions of people consume dietary supplements hoping to maintain or improve their health. These include vitamins, minerals, amino acids, herbs or other botanicals, and other substances used to increase total dietary intake. Sales of dietary supplements exceeded $30 billion in the U.S. alone in 2011. However, extensive research and systematic reviews have not detected beneficial effects *[Batsis 2021 (SR), Di Lorenzo 2015 (SR), McCormick 2010 (OR), Starr 2015 (OR)]*. Moreover, routine and high-dose supplementation may not be safe.

Implications

If a treatment is believed to be beneficial, do not assume that more of it is better.

References

Systematic reviews

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