Patient Resource

neuroscience CME

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Risky Business: Understanding and Attenuating Risk Associated with Disease-Modifying Therapy in Relapsing-Remitting Multiple Sclerosis

ABSOLUTE AND RELATIVE RISK - A PRIMER

The word ***risk*** simply means the chance or likelihood of something happening, that is, an event taking place. When talking about risk related to medicine, health, or treatments, it is important to understand the differences between two types of risk – ***absolute risk*** and ***relative risk***.

Absolute risk refers to the likelihood of an event occurring (for example, disease, adverse event [side effect], or worsening of symptoms) over a certain period of time. Absolute risk can be stated in several different ways—as a percentage (1%) or as numbers, such as a 1 in 100 chance or 0.01 chance.

Relative risk compares the differences in risk between two groups. Relative risk is always presented as a percentage.

Let's look at an imaginary example as it relates to the treatment of Multiple Sclerosis.

In the latest research study on a new treatment for MS, the researchers divided their patients into two equal groups. Each group included 100 patients. One group received drug ABC for one year. The other group received drug XYZ for one year. At the end of one year, the researchers looked at how many MS patients in each group had relapsed.

When they examined these numbers, the researchers found that the group of patients who took medication XYZ were 50% less likely to have an MS relapse, as compared with the group who took medication ABC. This means that the ***relative risk*** of having a relapse was 50% lower in the XYZ group.

Wow, sounds like drug XYZ is pretty amazing. As educated patients who take an active role in our treatment decisions, we don't yet have the full picture. To understand the true results of the study, which will ultimately allow us to make informed decisions, we need to know what the ***absolute risk*** was in the patients who took drug ABC in this study.

So, let's take another look at the relapse rate in group ABC. When we look at the study results, we find that 2 out of the 100 patients in group ABC had a relapse. This is an absolute risk of experiencing a relapse of 2%. Among those who took drug XYZ, only 1 patient had a relapse. The absolute risk in the XYZ group of having a relapse was 1%. To find the relative risk, we subtract the risk in group XYZ from the risk in group ABC: 2%-1%=1%. One percent is indeed a 50% relative reduction in risk. But gosh, that 1% reduction doesn't seem quite as impressive as the 50% relative risk reduction.

When you are reading articles in the newspaper or online, watching the news, or talking with your doctor about the latest treatments, make sure that you understand the ***absolute risk***. When talking about the likelihood of developing an adverse event, know what the likelihood of that event happening is in patients who do and do not receive the treatment. The absolute risk is where the real story lies.

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