Pace of new drug advances may be slowing, study finds

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Research discovers decrease in dramatic breakthroughs from clinical trials.

(HealthDay)—The drugs emerging from clinical trials in recent years seem less impressive than those developed in decades gone by, a new review finds.

Looking at more than 300 studies done since 1966, researchers found that drugs under development these days are less likely to solidly outperform placebos—the sugar pills or other inert substances against which new drugs are tested.

From 1966 to 1990, the average study drug was about four times as likely to achieve a particular outcome than a placebo. But in trials done since 2001, drugs were only 36 percent more likely than placebos to show a desired effect, researchers reported in the June issue of the journal *Health Affairs.*

The reasons for the "worrisome decline" are not clear, said lead researcher Dr. Mark Olfson, a professor of clinical psychiatry at Columbia University in New York City.

But it's possible, he said, that "much of the low-hanging fruit has already been picked. In other words, many of the easiest-to-discover effective treatments may have already been found."

Another possibility, though, is that drugs from days of yore were not as impressive as they seemed at the time.

Trials done today generally have a more rigorous design, and they may be producing fewer "spuriously inflated findings" compared to older clinical trials, Olfson said.

A researcher not involved in the work said the findings are interesting, but "raise more questions than answers."

"The study is not designed to tell us the causes," said Ted Kaptchuk, an associate professor of medicine at Harvard Medical School, and director of the university's program in placebo studies.

"Are the new drugs in the pipeline just not as good?" Kaptchuk asked. It's not clear. In part, he said, that's because other research has found that people in clinical trials these days are more likely to respond to the placebo compared to people in studies 20 or 30 years ago.

Researchers have dubbed that phenomenon "placebo drift," Kaptchuk said, but no one knows what's driving it.

One theory is that today, people in a trial testing an antidepressant, for example, may go in with strong beliefs about the effects of those drugs—whereas people in a trial in 1990 may not have.

Patients in a clinical trial do not know whether they are receiving a real drug or a placebo. So if someone on a placebo believes they're getting the real drug and the drug is good, that could affect how they respond.

Of course, it's not that effective drugs are no longer emerging, said Jean Slutsky, director of the Center for Outcomes and Evidence, part of the Agency for Healthcare Research and Quality, the government agency that funded the study. "There have certainly been important treatment advances in recent years and we should expect that to continue," Slutsky said.

Many of today's widely used prescription drugs—such as cholesterol-lowering statins and SSRI antidepressants—were developed in the 1980s or '90s. Those years also saw some medical breakthroughs, such as the protease inhibitors that turned HIV infection into a manageable chronic disease for many.

But other top-selling drugs emerged in the past decade or so, including the schizophrenia drug Abilify, the reflux medication Nexium and the antidepressant and pain drug Cymbalta.

It's also not clear from the current findings whether the decline in drugs' effects exists only in certain areas of medicine and not in others, Olfson said.

He said the number of studies in different specialties was too small to make a comparison. For example, only a small percentage of the 315 trials tested cancer drugs, a field in which researchers currently are developing high-tech "targeted" drugs they hope will be more effective and less toxic than older chemo drugs.

Still, Olfson said, his findings suggest that researchers need to adjust their focus.

Instead of pouring everything into traditional clinical trials looking for the next blockbuster, he said, researchers also should do more so-called comparative effectiveness studies, which look at how existing treatments stack up in the real world.

"In practice, for example, one treatment may turn out to be much more effective than another because many more patients actually take it than the other treatment," Olfson said.

Slutsky agreed that comparative effectiveness studies are important. That kind of research, she said, "will help illuminate important distinctions among treatments and help decision-makers make informed decisions regarding treatments for particular conditions."

Kaptchuk said the findings underscore a need to better understand the placebo effect, including how it may be changing drugs' apparent performance in clinical trials. And on a broader level, he said, the results show how complicated scientific research is.

"People tend to think that, you do a scientific experiment and you get certainty," Kaptchuk said. "But it's a lot more complex than that."

More information: Learn more about clinical trials from the U.S. National Institutes of Health.

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