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The 'cure' for aging is getting closer

By SCOTT CODY Guest columnist
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I previously discussed the research into aging in this column when I described Dr. Bill Andrews' research. He works on telomeres and their effect on the process of aging. Research has now opened on a new front: the cells' ability to use nutrition and then detoxify.

Research is now focusing on rapamycin, known generically as sirolimus. It has taken scientists a long time to understand this drug.

Historically, rapamycin was discovered on Easter Island in 1964. It was thought at first to be an antifungal agent. The fact that rapamycin suppresses the immune system caused concern. Eventually, the FDA approved it as an immune suppressor drug that is useful for transplant recipients and as an anticancer agent because it suppresses the growth of tumors.

No one thought about using rapamycin as an anti-aging drug until animal studies revealed that the drug slows down the onset of many chronic age-related diseases. The bottom line was that rapamycin treatment produced 25-60% life extensions, including improving the animal's health.

What about humans? I will need to introduce you to some terminology to explain this. "mTOR" means “mechanistic target of rapamycin” and is an essential controller of cell metabolism. mTOR activates cellular building mechanisms of growth and proliferation and is triggered by eating.

The other word to know is "autophagy," which is the counterbalance to mTOR. Autophagy is responsible for the removal of cellular trash and general cell housekeeping. Activation of autophagy happens when you fast. The result is that damaged cell components are recycled or removed (cellular detoxification).

Studies reveal that mTOR and autophagy regulate the health and aging process of all living organisms. Rapamycin inhibits mTOR, which causes autophagy to be activated. Autophagy restores youthful body metabolic functions. The net result is delaying age-related diseases.

Because humans are now spending considerable time eating, which activates mTOR much more than in the days when meals were less frequent and fasting occurred much more often. The consequence is an imbalance in the mTOR/autophagy system, which is a significant reason for the nearly epidemic health issues we have today.

One way to get this ratio in balance is to support the body with compounds that induce beneficial autophagy. Rapamycin is such a compound, and taking it simulates calorie restriction and fasting. Can weight loss be achieved by using rapamycin? No studies are available, but there are reports that weight loss occurs when taking rapamycin.

Can the mTOR/autophagy ratio be improved without the use of rapamycin? The answer is "yes."

Intermittent fasting, or not eating one day a week, is one method of suppressing mTOR. The other standard method of intermittent fasting is the 16:8 way of eating. This method means you eat only for eight hours of the day. The rest of the day, you do not eat. A typical schedule would be eating from 10 a.m. to 6 p.m. and fasting the rest of the time.

Should you want to try rapamycin, there are a few things to know. First, rapamycin is a prescription drug, and anti-aging is not an FDA-approved indication for the use of this drug. Some physicians may be reluctant to prescribe this medication if you aren't using it for immune suppression.

The drug's price to pharmacies is around $3,000 for 100 2 mg tablets. Rapamycin for anti-aging should not be used in children and probably not in adults under age 30. Daily dosing is the dose frequency for immune suppression in transplant recipients. Dosing once a week seems to be best to suppress age-related diseases without seriously inhibiting the immune system.

The dose for anti-aging is estimated to be around 4-6 mg weekly, but you would need to validate this dose. The goal is to find an amount that does not drastically suppress your immune system.

Confirming the dose is done starting with a baseline blood lab test followed by repeating the tests in around 90 days. These labs may include CBC with differential, comprehensive metabolic panel, coronary risk panel and iron total iron-binding capacity. This lab information helps you evaluate the health of your immune system and track your hemoglobin, red and white blood cell count, blood glucose, blood insulin, triglycerides, and iron levels.

Depending on the results of the lab tests, you may need to adjust the dose or frequency. Rapamycin can have severe side effects, but usually, they do not appear when taking the drug only once a week.

If you want more information, I suggest you get the book "Rapamycin: Rapamycin, mTOR, Autophagy & Treating mTOR Syndrome" by Ross Pelton.

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