ビタミンB3による化学予防 (Abstract 9000)

ONTRAC：ニコチン酸アミドの経口摂取は高リスクの人々における非メラノーマ皮膚がん発症率を低下させる

ONTRAC: Oral nicotinamide reduces rates of non-melanoma skin cancer in people at high risk of the disease

ONTRAC（Australian Oral Nicotinamide to Reduce Actinic Cancer）スタディの結果、ニコチン酸アミドと呼ばれるビタミンB3の一種は高リスクの人々における新たな皮膚がんを有意に軽減させる、と第51回American Society of Clinical Oncology年次集会で発表された。このスタディにおいて、過去5年間に少なくとも2つの非メラノーマ皮膚がんを発症し、したがって高リスクと考えられた患者386人がニコチン酸アミドまたはプラセボを12か月間毎日内服する群にランダムに割り付けられた。スタディ対象は皮膚がんクリニックで一般的に見られる患者の混成割合を反映していた（平均年齢66歳、男性が3分の2）。新たに非メラノーマ皮膚がんと診断された率はニコチン酸アミド群においてプラセボ群よりも23%低かった。治療開始後3か月後に日光角化症例数はニコチン酸アミド群で11%減少し、9か月後には20%減少した。ニコチン酸アミドの予防効果は基底細胞がんと扁平上皮細胞がんとで同等であった。ビタミンB3の一種であるニコチン酸アミドは副作用を引き起こすことで知られているが、今回のスタディにおいてニコチン酸アミドは重症の副作用は何も来さなかった。

Full Text

The Australian Oral Nicotinamide to Reduce Actinic Cancer (ONTRAC) Study shows that a form of vitamin B3 called nicotinamide significantly reduces rates of new skin cancers in people at high risk of the disease. Taken as a twice-daily pill, nicotinamide reduced the incidence of new non-melanoma skin cancers by 23%.
The results of ONTRAC were presented at the American Society of Clinical Oncology's 51st Annual Meeting.

Nicotinamide is safe, affordable, and available over the counter in most countries. The findings have the potential to decrease the health burden and economic cost of skin cancer – the most common form of cancer in fair-skinned populations worldwide.

"This is the first clear evidence that we can reduce skin cancers using a simple vitamin, together with sensible sun protection. We hope that these findings can be immediately translated into clinical practice," said senior study author Diona Damian, MBBS, Ph.D., a professor of dermatology at the Dermatology University of Sydney. "However, people at high risk of skin cancer will still need regular check-ups with their doctor."

The primary cause of non-melanoma skin cancer is sun exposure. Despite intensive sun protection campaigns, the incidence of skin cancer is continuing to increase worldwide.

In this study, 386 patients who had at least two non-melanoma skin cancers in the last five years – and were therefore considered to be at high risk – were randomly assigned to daily nicotinamide or placebo for 12 months. The study population reflected the mix of patients typically seen in a skin cancer clinic – the average age was 66 years, and two-thirds of the patients were men (skin cancer is more common in men). Many of the patients had ongoing medical issues, such as heart disease, arthritis, high blood pressure, and chronic lung disease.

The rates of new non-melanoma skin cancer diagnoses were 23% lower in the nicotinamide group compared to the placebo group. The numbers of actinic keratoses were reduced in the nicotinamide group by 11% at three months, and by 20% at nine months of treatment. Whilst nicotinic acid, which is a different form of vitamin B3, is known to cause side effects including headaches, flushing, and low blood pressure, nicotinamide lacks these side effects and was not associated with any serious side effects in the study.

The most common types of non-melanoma skin cancer are basal cell carcinoma (BCC) and squamous cell carcinoma (SCC). SCCs can spread to lymph nodes and internal organs. BCCs rarely spread but can cause cosmetic problems as they often occur on the face. Nicotinamide had comparable efficacy in preventing BCC and SCC.

UV radiation in sunlight causes skin cancer via two key pathways – DNA damage and suppression of skin immunity. This study builds on a decade of preclinical and early clinical studies, which suggested that nicotinamide both enhances the repair of DNA in skin cells damaged by sunlight, and protects the skin's immune system against UV light.

DNA repair is an energy-intensive process. UV radiation actively blocks energy production in skin cells. Cells convert nicotinamide into a molecule called nicotinamide adenine dinucleotide, which is essential for cellular energy production. The researchers believe that nicotinamide thus helps replenish cellular energy after sunlight exposure, giving cells the energy boost they need to repair DNA damage and prevent immune suppression.

Further studies are planned to determine if nicotinamide can help reduce skin cancers in people with suppressed immune systems, such as organ transplant recipients who have to take lifelong immune suppressive medications. People with suppressed immune systems have skin cancer rates up to 50 times higher than those with normal immune systems.

"Every opportunity to prevent cancer is welcome news" commented ASCO President Peter Paul Yu, M.D., FACP, FASCO. "With this study, we have a remarkably simple and inexpensive way to help people avoid repeat diagnoses of some of the most common skin cancers. With just a daily vitamin pill, along with sun protection and regular skin cancer screenings, people at high risk for these types of skin cancers have a good preventive plan to follow."

This study received funding from Australia's National Health and Medical Research Council (NHMRC).

ASCO2015特集