Long-term use of blood pressure meds promoting sun sensitivity may raise lip cancer risk

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Long-term use of commonly used blood pressure medications that increase sensitivity to sunlight is associated with an increased risk of lip cancer in non-Hispanic whites, according to a Kaiser Permanente study that appears in the current online issue of *Archives of Internal Medicine.*

Funded by the National Cancer Institute, the study found that photosensitizing antihypertensive drugs such as nifedipine and hydrochlorothiazide were associated with cancer of the epithelial cells known as squamous cells—which are the main part of the outermost layer of the lips and skin.

Researchers compared 712 patients in Northern California with lip cancer to 22,904 people in a control group and found that the risk of squamous cell lip cancer was higher for those with long-term use of photosensitizing blood pressure medications.

"Lip cancer remains rare and an increased risk of developing it is generally outweighed by the benefits of these blood pressure drugs and other photosensitizing medications," said Gary Friedman, MD, an emeritus researcher at the Kaiser Permanente Northern California Division of Research and lead author of the study. "Physicians prescribing photosensitizing drugs should ascertain whether patients are at high risk of lip cancer by virtue of fair skin and long-term sun exposure and discuss lip protection with them. Although not yet

confirmed by clinical trials, likely preventive measures are simple: a hat with sufficiently wide brim to shade the lips and lip sunscreens."

The risk of lip cancer appeared to increase with increasing duration of use of these drugs and was not explained by a history of cigarette smoking, also a known risk factor for lip cancer, according to investigators.

Photosensitizing drugs are believed to absorb energy from ultraviolet and/or visible light, causing the release of electrons. This leads to generation of reactive oxygen intermediates and free radicals which damage DNA and other components of skin and lip cells and produce an inflammatory response, Friedman said.

Researchers ascertained prescriptions dispensed and cancer occurrence from August 1994 to February 2008. They identified 712 patients with lip cancer and 22,904 controls in the susceptible group of non-Hispanic whites. Researchers determined their use at least two years before diagnosis or control index date of the commonly prescribed diuretics, HCTZ and HCTZ combined with triamterene (HCTZ/TR), the angiotensin-converting enzyme inhibitor lisinopril, the calcium channel blocker nifedipine, and the beta adrenergic blocker atenolol, the only non-photosensitizer studied. Non- photosensitizing atenolol, when used alone, was not associated with increased risk. Findings for lisinopril were not as clear-cut as those for HCTZ, HCTZ/TR and nifedipine.

Researchers analyzed use of each drug both exclusively and regardless of use of others and focused on duration of use. The analysis controlled for smoking.

Researchers were not able to include basal cell and squamous cell cancers of the skin in this study because these diagnoses have not been recorded in their cancer registry. Also, researchers were not able to

adjust for sun exposure, the most important lip cancer risk factor, along with relative lack of pigmentation of the lips. Risk of developing melanoma was not associated with these drugs. This form of skin cancer has been more strongly associated with intermittent sun exposures, especially those producing sunburn, than with chronic sun exposure, so timing of use of photosensitizing drugs could be an important consideration, explain the researchers.

Provided by Kaiser Permanente