

## STUDENTS' CORNER

### LETTER TO THE EDITOR

# Most commonly prescribed blood pressure lowering drug linked with increased risk of skin cancer

Soha Alam Rehmani<sup>1</sup>, Maha Alam Rehmani<sup>2</sup>, Navaira Shoaib<sup>3</sup>

*Madam*, Hydrochlorothiazide (HCTZ) is the most commonly prescribed antihypertensive drug that belongs to a diuretic class.<sup>1</sup> It mainly works by increasing the removal of excess water and salts from the body into the urine and by this function it is most widely used alone or in combination with other medications to treat patients with uncontrolled blood pressure and oedema that results from numerous medical conditions like heart, liver and kidney diseases. It also helps treat other ailments like diabetes insipidus, renal tubular acidosis and reduce the risk of kidney stones in patients with high calcium levels in urine.

Despite its various uses and benefits, HCTZ comes with a heavy price of undesirable side effects like fatigue, lethargy, gastrointestinal discomfort and is known to cause hyperuricaemia and hypokalaemia associated with increased blood glucose.<sup>2</sup> Furthermore, HCTZ increases the skin sensitivity to sunlight. However, recent research has revealed a more worrisome side effect of HCTZ that needs to be highlighted.

In 2017, a nationwide study conducted in Denmark involving more than 70,000 patients with Basal cell carcinoma and 8000 patients with squamous cell carcinoma found a considerably increased risk of developing Non melanoma skin cancer, particularly among the users of HCTZ.<sup>3</sup> A recent study also substantiated that a total of 135 squamous cell carcinoma events per 100,000 person years were reported in new users of HCTZ.<sup>4</sup>

These alarming figures raise a question mark on the safety of HCTZ use. Moreover, HCTZ is now classified as a carcinogenic agent for humans by the International Agency for Research on Cancer and the U.S. Food and Drug Administration has also permitted changes to the HCTZ drug label to warn the health care workers and patients of the risk of non-melanoma skin cancer.<sup>5,6</sup>

Unfortunately in Pakistan, HCTZ is still heavily used as a diuretic and people are not much aware of this new fact. In view of these findings and the fact that HCTZ is among the most generally prescribed drugs in Pakistan, its potential

indication of causing skin cancer would impose a serious public health concern so the responsibility lies on the cardiologists, nephrologists and other medical physicians to be aware of this possible hazardous outcome of HCTZ use and should be cautious while prescribing it to patients who are at risk of developing skin cancer or who have had a history of skin cancer. Likewise, patients should also be educated about the risk and need to be advised to regularly check for any new or undesirable skin changes and report them immediately to the concerned physician. As this is a commonly prescribed medication it should also come with an instruction to restrain from sun exposure without adequate protection.

**Disclaimer:** None.

**Conflict of Interest:** None.

**Funding Disclosure:** None.

**DOI:** <https://doi.org/10.47391/JPM.11-3844>

## References

1. Stela Dineva, Katya Uzunova, Velichka Pavlova, Elena Filipova, Krassimir Kalinov, Toni Vekov. Comparative efficacy and safety of chlorthalidone and hydrochlorothiazide-meta-analysis. *J Hum Hypertens*. 2019; 33: 766-74.
2. Domenic A Sica, Barry Carter, William Cushman, Lee Hamm Thiazide and loop diuretics. *J Clin Hypertens (Greenwich)*. 2011; 13:639-43.
3. Pedersen SA, Gaist D, Johannesdottir Schmidt SA, Hölmich LR, Friis S, Pottegård A. Hydrochlorothiazide use and risk of nonmelanoma skin cancer: A nationwide case-control study from Denmark. *J Am Acad Dermatol*. 2018; 78:673-81.
4. Rouette J, Yin H, Pottegård A, Nirantharakumar K, Azoulay L. Use of Hydrochlorothiazide and Risk of Melanoma and Nonmelanoma Skin Cancer. *Drug Saf*. 2021; 44:245-54.
5. International Agency for Research on Cancer Some Drugs and Herbal Products. IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Vol 108. France: International Agency for Research Cancer, 2016.
6. Research C for DE. FDA approves label changes to hydrochlorothiazide to describe small risk of non-melanoma skin cancer. FDA. [Online] [Cited 2021 April 11]. Available from: URL: <https://www.fda.gov/drugs/drug-safety-and-availability/fda-approves-label-changes-hydrochlorothiazide-describe-small-risk-non-melanoma-skin-cancer>

<sup>1,2</sup>5th Year MBBS Student, Department of Internal Medicine, Dow University of Health Sciences, Karachi, Pakistan; <sup>3</sup>4th Year MBBS Student, Department of Internal Medicine, Dow University of Health Sciences, Karachi, Pakistan.

**Correspondence:** Soha Alam Rehmani. e-mail: [sohaalam1998@gmail.com](mailto:sohaalam1998@gmail.com)