

Exploring the Potential Association Between Hair Straighteners and Uterine Cancer: An Urgent Call for Extensive Research

Huzaifa Ul Haq Ansar, Manahil Mubeen* and Qazi Shurjeel Uddin

MBBS students at Dow Medical College in Pakistan

Corresponding Author

Manahil Mubeen, MBBS student at Dow Medical College in Pakistan.

Submitted: 2023, July 11 ; Accepted: 2023, Aug 14: Published: 2023, Aug 22

Citation: Ansar, H. U. H., Mubeen, M., Uddin, Q. S. (2023). Exploring the Potential Association Between Hair Straighteners and Uterine Cancer: An Urgent Call for Extensive Research. *Int J Women's Health Care*, 8(2), 83.

Cancer, a formidable and concerning word, has a profound impact on individuals. In China, it stands as the leading cause of death, while the United States witnesses a daunting annual count of 1.6 million new cancer cases, resulting in a substantial toll of 600,000 lives lost to this disease. Against the backdrop of a society immersed in self-care products and technological advancements, imagine the reaction if a beloved product faced allegations of being closely linked to one of the most dangerous types of cancer affecting women: uterine cancer. Startlingly, in 2019 alone, a significant population of 822,388 women in the US was living with uterine cancer. This places uterine cancer as the fourth most commonly diagnosed cancer and the seventh leading cause of death among women [1]. These figures underscore the importance of delving deeper into the potential connections between specific products and women's health, warranting further scrutiny and research.

Obesity, family history, hormone replacement treatment, and tamoxifen use are among the major risk factors for uterine cancer, according to studies. Hair straighteners also include a variety of dangerous chemicals, including triclosan, an antibacterial substance known to cause mutations and might contribute to cancer linked to colitis. It is conceivable to think about the possibility of triclosan generating mutations and malignant changes in the uterine lining, even though there is currently no direct proof connecting it to uterine cancer. [1]. In contrast, it is important to note that hair straighteners contain a group of chemicals called parabens, which is a group of endocrine disruptive chemicals (EDC's) linked to an increased risk of breast cancer [2]. Evidence of paraben exposure has been substantiated through the detection of these chemicals in human blood and urine samples. Parabens have been shown to negatively impact endocrine and intracrine targets associated with breast carcinogens, potentially influencing estrogen-converting enzymes and leading to elevated estrogen levels [3]. As mentioned earlier, hormone replacement therapy, which is a known risk factor for uterine cancer, is associated with increased estrogen levels [4]. If parabens also contribute to elevated estrogen levels, it is plausible that they may similarly contribute to the development of uterine cancer, akin to hormone replacement therapy [5]. Additionally, tamoxifen, a medication taken by individuals predisposed to breast cancer for prevention purposes, functions by blocking estrogen receptors in

the breast while activating them in the uterus, potentially leading to uterine cancer [4]. Given that hair straighteners contain parabens, women using these products may face an increased susceptibility to breast cancer and may subsequently opt for tamoxifen, which prevents breast cancer but has been linked to uterine cancer in certain cases. Furthermore, hair straighteners contain various other hazardous substances such as cyclosiloxanes, phthalates, benzophenone3, and formaldehyde, with the latter being a known carcinogen.

It is therefore clear that there is a potential association between using hair straighteners and the emergence of uterine cancer. Conducting extensive large-scale trials that delve into the underlying mechanisms and examine the main causes of this relationship is essential if we are to completely comprehend the extent of this link. By doing this, we can acquire more conclusive data and understanding that will help guide public health policies and guarantee the security of those who use hair straighteners.

References

1. Chang, C. J., O'Brien, K. M., Keil, A. P., Gaston, S. A., Jackson, C. L., Sandler, D. P., & White, A. J. (2022). Use of straighteners and other hair products and incident uterine cancer. *JNCI: Journal of the National Cancer Institute*, 114(12), 1636-1645.
2. Darbre, P. D. (2021). Endocrine disrupting chemicals and breast cancer cells. *Advances in Pharmacology*, 92, 485-520.
3. Hager, E., Chen, J., & Zhao, L. (2022). Minireview: parabens exposure and breast cancer. *International Journal of Environmental Research and Public Health*, 19(3), 1873.
4. Sjögren, L. L., Mørch, L. S., & Løkkegaard, E. (2016). Hormone replacement therapy and the risk of endometrial cancer: A systematic review. *Maturitas*, 91, 25-35.
5. Emons, G., Hushmand-Nia, A., Krauss, T., & Hinney, B. (2004). Hormone replacement therapy and endometrial cancer. *Oncology Research and Treatment*, 27(2), 207-210.

Copyright: ©2023 Manahil Mubeen, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.