The Use of Curcumin in the Treatment of Cervical Cancer

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The anti-tumor and anti-viral properties of curcumin, in addition to its pharmacological safety and negligible cost render curcumin an effective agent against cervical cancer, which continues to be a leading cause of women morbidity and mortality. The medical use of curcumin, however, is limited by its low systemic bioavailability and solubility. To improve the solubility of curcumin, resveratrol and epicatechin were added to create tricurin- a drug solution with greater solubility and tumor efficacy. This research found that tricurin can be used, successfully, to treat treat HeLa cells. To achieve near-complete cell death, approximately 65 μM of curcumin and epicatechin were required, while only 35 μM of tricurin were required. Furthermore, the IC50 concentration of curcumin was 15uM, while that of epicatechin was 9uM. The tricurin formulation, however, killed at a decreased concentration of 3uM.Furthermore, it was found that in vivo tumors treated with the tricurin formulation were significantly smaller than control,untreated tumors after a treatment interval of only ten days. To further validate the potential of tricurin a series of penetration and toxicity assays were conducted. The tissue studies made evident that curcumin significantly penetrates through mice epithelium when compounded into a moisture cream- VanPen. In vivo epithelium studies further established that the cream is a stable and safe medication, as there were no observed differences between the epithelium of the experimental groups. Both groups showed evidence of dryness, but there was no redness, swelling, or presence of rashes. Thus, the cream medication can approach its potential use in human cancer treatment as a factor that reduces the amount of radiation and surgery that comprises treatment.

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