Complementary and Alternative Medicine (CAM) as a chemopreventive strategy in skin cancer

S Higgins, O Ahadat and A Wysong Keck Medicine of USC, Los Angeles

Introduction: Non-melanoma skin cancer (NMSC) outnumbers all other cancers combined. The annual cost of treating skin cancers in the US is estimated at $8.1 billion. This severe economic burden, in addition to the significant morbidity and mortality that has emerged, has driven movement towards creative strategies for chemoprevention, including incorporation of complementary and alternative medicine (CAM). Complementary and alternative medicine (CAM) is loosely defined as any healing practice “that does not fall within the realm of conventional medicine” [1]. A 2010 report cited that 78% of respondents felt that physicians should incorporate CAM into their treatment plans [2,3]. Additionally, many of the drugs developed to treat cancer are not suitable for chemoprevention due to their side effect profile. Natural products may provide sustainable alternatives. Methods: A comprehensive PubMed search consistent with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines was performed between the years 1984-2017. Results: The review yielded a total of 409 manuscripts spanning a wide variety of phytochemicals. Predominantly among the studies, the most common groups of CAM were herbs, vitamins, and lymphocytes. Highlights of these studies will be reviewed. The vast majority were conducted in an in vitro or animal-based model and thus classified as level of evidence 5. Conclusion: Despite treatment advancements in recent decades, skin cancer incidence continues to rise. Complementary and alternative medicine (CAM) may provide sustainable chemopreventive solutions. The literature provides theoretical and mechanistic insight into the potential benefit of a variety of CAM treatments. The current study is part of the majority of the literature focusing on effects of phytochemicals. The majority of studies, however, are methodologically flawed. Prior to becoming accepted into mainstream practice, more high quality prospective studies are indicated.

US prevalence estimates for hidradenitis suppurativa with a focus on race

A Garg1, J Kirby1, J Lavian1, G Lin1 and A Strunk1
1 Hoistia Northwell School of Medicine, Department of Dermatology, Garden City, NY and 2 Penn State Hershey Medical Center, Hershey, PA

Most studies of hidradenitis suppurativa (HS) prevalence involved selected samples and/or small cohorts which limit generalizability. The objective of this study was to investigate standardized prevalence estimates for HS in the US population, including specific demographic subgroups related to race. We performed a retrospective cohort analysis (1999-October 2016) using a large, multi-institutional database (Explores) developed by IBM Corporation and includes notes, laboratories, and claims matched for each unique patient. Patients with all types of insurance as well as those who are self-pay are represented. Overall, 47,690 patients with HS were identified. Our analyses showed the overall HS prevalence in the US population sample was 0.1%, or 98 per 100,000 people. Also, 73.8% of the sample was female, 54.1% were Caucasian and 45.9% were of another race, and the largest age group was 30-39 years old. Prevalence rates are adjusted for age, and/or gender and/or race, excluding the variable of interest. The adjusted prevalence in women was more than double that of men (1.37% vs 0.58%, p < .05). HS prevalence was highest among patients aged 30-19 years (0.77%) compared with all other age groups (p < .05) after adjustment for gender and race. Related to race, African Americans and hispanic groups had a higher adjusted prevalence compared to the Caucasian group with prevalences of 0.3%, 0.22% and 0.1%, respectively (p < .05). In summary, HS is an uncommon but not rare disease in the US. Importantly, HS disproportionately affects women, young adults, as well as African-Americans and biracial groups. The highest HS prevalence was in African American and biracial groups.

Hypothyroidism and squamous cell carcinoma of the skin: A potential link

O Ahadat, S Higgins, C Troedello, G Talmor, N Kokot and A Wysong Keck Medicine of USC, Los Angeles

There are multiple known risk factors for cutaneous squamous cell carcinoma (SCC), but hypothyroidism has never been considered one of them. The objective of this study is to determine whether patients with cutaneous SCC are at a higher prevalence of hypothyroidism than the general U.S. population and to query a causal effect of hypothyroidism on future development of SCC. A retrospective review was done for patients seen at the University of Southern California with cutaneous SCC from 2006 to 2016. Charts were reviewed for the presence of hypothyroidism and thyroid replacement therapy prior to the diagnosis of SCC for each patient. Multiple prevalence studies reporting the prevalence of overt and subclinical hypothyroidism in the general U.S. population and/or elderly U.S. population were gathered from the literature for reference. The most recent prevalence estimate of overt hypothyroidism amongst the general U.S. population was 0.1%. At our center, of the 261 patients diagnosed with SCC of the skin, 61 (23%) were found to have a preceding diagnosis of hypothyroidism, demonstrating a significant elevation of the population-wide rate (p < .01). There were no significant differences in ages under, over 60 years of age and in patients with hypothyroidism and SCC patients without hypothyroidism. Nodal metastasis rate was also noted to be higher in SCC patients with hypothyroidism than SCC patients without hypothyroidism although this relationship was not statistically significant (20% vs 13%, p= .18). Thus, our review suggests that patients with SCC of the skin are significantly more likely to have a history of hypothyroidism than the general population. Given the chronological distribution of the two diseases, we conclude that hypothyroidism may act as an independent risk factor for the development of cutaneous SCC. Identifying risk factors for SCC of the skin will guide preventative efforts in the future.

Role of graft versus host disease in the development of secondary skin cancers in hematopoietic stem cell transplant recipients: A meta-analysis

P Ramhia, R Conic1, M Pilango2 and W Bergfield3
1 Cleveland Clinic, Cleveland, OH and 2 University Hospitals Cleveland Medical Center, Cleveland, OH

Incidence of secondary skin cancers and descriptions of risk factors have been widely reported on within the hematopoietic stem cell transplant (HSCT) patient population. Studies have demonstrated inconsistent associations between acute and chronic graft versus host disease (GVHD) and secondary skin cancer incidence. MEDLINE and the Cochrane Database of Systematic Reviews were searched for eligible studies that reported on incidence of GVHD in both the total population of HSCT recipients, and in the secondary skin cancer patients only. In total, 1,952 records were screened, and 1,411 original studies were reviewed for eligibility. Study quality was assessed with Downs and Black checklist. Seven studies were deemed eligible, providing a cohort of 54,133 HSCT patients. Incidence of secondary skin cancers (NMSCs) in patients with field cancerization

S Marcus1, D Pacioppo2, A Houlihan1, M Ferdon1 and J Berg1 1 Sun Pharmaceutical Industries, Montclair, NJ, 2 Therapeutics Inc., San Diego, CA and 3 Sun Pharmaceutical Industries, Congers, NY

Patients with field cancerization (at least one prior NMSC and a biopsy of clinically normal appearing skin) are at increased risk for the development of cutaneous SCC. Identifying risk factors for SCC of the skin will guide preventative efforts in the future.