



# Recognizing the Role of Complementary and Alternative Medicine Utilization Among Plastic Surgery Patients

Cody L. Mullens<sup>1</sup> · James Gatherwright<sup>2</sup> · Rebecca Knackstedt<sup>3</sup> 



Received: 16 September 2019 / Accepted: 22 September 2019 / Published online: 1 October 2019  
© Springer Science+Business Media, LLC, part of Springer Nature and International Society of Aesthetic Plastic Surgery 2019

*Level of Evidence V* This journal requires that authors assign a level of evidence to each article. For a full description of these Evidence-Based Medicine ratings, please refer to the Table of Contents or the online Instructions to Authors [www.springer.com/00266](http://www.springer.com/00266).

Dear Madam/Sir

More than a third of adults in the USA report utilization of complementary medicine of some form including herbal, vitamin, and other dietary supplementation [1]. Despite its common utilization in the US population, such supplementation has received minimal consideration in the plastic surgery journals and the surgical literature at large.

Anecdotal evidence has taught anesthesiologists and surgeons that herbal medication and supplements should be discontinued prior to elective surgeries. However, there are data suggesting that some herb medication and supplements can augment wound healing. We have recently published a standardized review regarding the advantages of two commonly utilized herbal supplements (arnica and bromelain) in the perioperative period (in press). There is an abundance of additional evidence in the literature supporting the implementation of other supplements (e.g., vitamin D, probiotics, protein powder, curcumin, zinc, and arginine).

Despite limited application by physicians, plastic surgery patients may utilize herbal medicine, homeopathic remedies, and dietary supplements more than the general public. An assessment of elective surgical outpatients found that nearly three quarters of patients consumed some form of alternative medicine preoperatively, with the number of supplements ranging from 1 to 44. Of those reported medicines, supplements, and remedies, a sizeable proportion are known to potentially impact physiology pertinent to surgical care including the coagulation cascade, blood pressure control, cardiac function, electrolyte imbalance, and drug interactions [4]. Data from the anesthesiology literature have suggested that herbal medicines and homeopathic remedies are more often utilized among white, educated, and higher socioeconomic status [5]. Interestingly, these patient demographics mirror the composition of patients seeking cosmetic plastic surgery.

Complicating these findings, the majority of treating plastic surgeons and anesthesiologists are largely unaware of supplement use by their patients [2, 3]. This phenomenon appears to be a communication failure between physicians and patients, with both parties being culpable. Physicians generally fail to specifically ask about supplements instead of focusing on traditional medications and patients also fail to provide this information. For example, Norred et al. demonstrated that that greater than 70% of surgical patients do not reveal consumption of herbal or homeopathic medicine to their physicians [4].

Therefore, the true impact of complementary medicine in plastic surgery cannot accurately be determined. To that end, it behooves plastic surgeons to revisit the potential positive and negative effects complementary medicine can have on patient outcomes. To analyze this, we must first design prospective, standardized studies that quantify the

✉ Rebecca Knackstedt  
knacksr@ccf.org

<sup>1</sup> West Virginia University School of Medicine, Morgantown, WV, USA

<sup>2</sup> Division of Plastic Surgery, MetroHealth, Cleveland, OH, USA

<sup>3</sup> Department of Plastic Surgery, Cleveland Clinic Foundation, 2049 E 100th Street, Cleveland, OH 44195, USA

actual utilization of herbals and other supplements. Ideally, these studies would involve individual and combined statistical analysis of both reconstructive and cosmetic surgical populations. In general, it is important that plastic surgeons become more educated on the indications, advantages, dosing, contraindications, and potential complications associated with each supplement. The studies presented here also should alert plastic surgeons of the potential for inaccurate patient assessment and encourage them to incorporate direct queries regarding complementary medicine use in their preoperative evaluation.

In conclusion, we have highlighted the paucity of data in the plastic surgery literature as it relates to alterative and complementary medicine. Moving forward, we hope more physicians will prospectively and critically evaluate the putative, positive effects complementary medicine can have on their patients.

**Funding** This research was not supported any form of funding from grants or other financial means.

#### **Compliance with Ethical Standards**

**Conflict of interest** The authors declare that they have no conflicts of interest to disclose.

**Human and Animal Rights** This article does not contain any studies with human participants or animals performed by any of the authors.

**Informed Consent** For this type of study informed consent is not required.

#### **References**

1. Clarke TC, Black LI, Stussman BJ, Barnes PM, Nahin RL (2015) Trends in the use of complementary health approaches among adults: United States, 2002–2012. *Natl Health Stat Rep* 79:1–16
2. Collins D, Oakey S, Ramakrishnan V (2011) Perioperative use of herbal, complementary, and over the counter medicines in plastic surgery patients. *Eplasty* 11:e27
3. Heller J, Gabbay JS, Ghadjar K et al (2006) Top-10 list of herbal and supplemental medicines used by cosmetic patients: what the plastic surgeon needs to know. *Plast Reconstr Surg* 117(2):436–445
4. Norred CL (2002) A follow-up survey of the use of complementary and alternative medicines by surgical patients. *AANA J* 70(2):119–126
5. Tsen LC, Segal S, Pothier M, Bader AM (2000) Alternative medicine use in presurgical patients. *Anesthesiol J Am Soc Anesthesiol* 93(1):148–151

**Publisher's Note** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.