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Best Practice Post-Market Surveillance for a Food Ingredient/Product.

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Objective: The paradigm for post-market surveillance (PMS) related to direct-to-consumer market is undergoing change and evolution. New regulatory initiatives focused on food and consumer product safety coupled with consumer expectations of safety transparency have led many manufacturers to re-evaluate their product stewardship efforts and increase their focus on enhanced, best practice methods of PMS. The challenges are many but all companies must distinguish their products and ingredients from others in their market space. Companies must also contribute to the overall science and safety profile of individual ingredients when those ingredients are common to many marketing partners and competitors alike. The objective of this project was to establish and promote a "best practice" approach to monitoring the safety of a stevia based ingredient intended for global launch in the direct-to-consumer market.

Materials and Methods: In 2008, Cargill launched their Truvia® brand sweetener, a new direct-to-consumer non-nutritive sweetener containing highly purified steviol glycosides. In addition to a CRAS self-determination and subsequent US FDA letter of no object to GRAS status, Cargill solicited outside support in the area of direct-to-consumer PMS to design an ongoing best practice safety surveillance system specific to this product. Cargill elected to partner with the SafetyCall International Poison Center (SCI), an academically affiliated, triple board licensed healthcare firm that routinely performs independent, third party PMS support for consumer product companies both large and small. A joint review of stevia science and medical literature was performed to identify specific safety areas of interest. SCI initiated a 24/7 medical call center support line utilizing licensed health care practitioners. All product labeling as well as the product website prominently displayed company contact information for product related concerns including adverse events. Any consumer alleging product related adverse effects (e.g. nausea, vomiting, diarrhea, headache, allergic reaction, etc.) were immediately transferred to SCI professional healthcare staff to document and investigate incident details and circumstances of product use. To aid in additional stevia focused incident data collection beyond what is routinely collected by poison centers managing AE incidents, SCI and Cargill collaborated on an enhanced, product specific questionnaire designed to collect data specific to the project.

Results: Four years of product specific incident data has been collected allowing for normalization of incidence rates compared to sales and distribution; comparison of normalized relative incidence rates against standard factors for fault analysis; investigation of unique safety hypothesis related to steviol glycosides and adverse events; and benchmark analysis against blinded data within, across, and outside the product class. The project has enabled product managers to confidently depict the safety profile of the product, the consumer use patterns in the US market, and use related data to serve as a surrogate and representative measure of safety expectations in new markets not amendable to similar consumer level investigations. The value of the SCI collaboration allowed evaluation of spontaneously reported incident data by medical and toxicology health professionals who are routinely tasked with assessing standard factors of association to identify relationships between product use and adverse effects as well as distinguish unrelated adverse events occurring concomitantly but unlikely associated with product use.

Conclusion and Broader Impacts: Botanical ingredients typically found in food and dietary supplements have an inherently wide margin of safety. Although safety issues are uncommon, companies can and should put robust and sensitive ongoing PMS systems in place to monitor the quality and safety of their products. Coupled with in-market clinical trials, a robust PMS stewardship effort can serve as an additional safety net and substantially enhance the process of safety monitoring and confirmation of the expected safety profile. Seeking outside input from experts in the field including academic, medical and other safety professionals can add credibility and impartiality to the process. This project provides a blueprint for corporate best practices related to establishing and maintaining effective PMS for botanical food ingredients.

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