

*Prospective Randomized
Evaluation of Herbal Product
Use in Surgical Patients*

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Abstract

PURPOSE: To evaluate the use of herbal supplements among surgical patients in a predominantly Hispanic population.

METHODS: Prospective randomized evaluation of patients aged 18 years or older scheduled for surgery. Prior to surgery, a 15 to 30 min semi-structured interview was conducted focusing on the use of herbal products that have associated with adverse events. Two days after surgery, the interviewer conducted a chart review recording any complications that the patient experienced during or after surgery.

RESULTS: Seventy percent of our sample (N=117) admitted to using herbal products. About 58% of patients rated the products as “excellent” in treating their conditions and 92% of them did not inform their physician of their use. Among the herbal products that were used, 18% of the products are known to cause adverse reactions, 12% are associated with causing drug interactions, and 10% are known to negatively interact with specific disease states. Nine patients who reported using herbs had complications during and two days post surgery.

CONCLUSION: With the growing use of herbal products and because most user do not inform their physician, there is increasing concern related possible herbal related adverse events during surgery. The current study documented at least 141 instances that may lead to herbal related adverse events. Eleven percent of herbal users had documented complications during surgery. A thorough examination of a patients medication history including use of herbal products should consistently be performed in order to minimize complications during and after surgery.

Methodology

- **The study was approved by the Texas Tech and the UTEP IRB.**
- **A signed consent was obtained from each patient.**
- **Prospective analysis of randomly selected patients scheduled for surgery at R.E. Thomason General Hospital between January and April 2002.**
- **Inclusion criteria: Patients that are more than 18 years of age, scheduled for surgery within the next 24 to 36 hours.**
- **Exclusion criteria: Emergency surgery**
- **Patients were interviewed using a 5 page bilingual (Spanish and English) questionnaire to collect data.**
- **The primary endpoints of this study were**
 - **A. To establish the frequency of herbal use patterns in patients scheduled for surgery.**
 - **B. Type of herbal product use in patients scheduled for surgery.**
- **Secondary endpoints of the this study were**
 - **A. To establish the actual percentage of patients asked about herbal product use prior to surgery.**
 - **B. To evaluate and compare patients that presented any form of complications, with herbal product use.**

Background

- The study was conducted at R.E. Thomason General Hospital in El Paso Texas.
- Participants were selected at random.
- Eighty percent of the population in El Paso Texas is Hispanic, primarily Mexican-American.
- NEJM 1993 - 34% of Americans use CAM (6% of participants were Hispanics).
- JAMA 1998 – 42% of Americans use CAM (10% of participants were Hispanics). The use of herbal products was 12.1%.
- JAMA 2001- Identified 8 herbs that potentially pose the greatest impact on patients undergoing surgery.
- Pharmacotherapy 2002 – Of the 50 patients that had undergone surgery 10 (20%) were taking garlic 1 (2%) was taking St. John's wort, and 1 (2%) was taking ginger.
- American Society of Anesthesiologies (ASA) – Recommendations to stop herbal products two to three weeks prior to surgery.
- Journal of Clinical Anesthesia 2000 – 32% of patients admitted to self-administering one or more herb related compound.

Demographics

Gender	Number	Percent
Female	68	59.5
Male	47	40.5
Age (Range)	(Mean)	(Std Deviation)
19-81	48.58	14.2
Birth Place	Number	Percent
None US born	77	67.2
US born	38	32.8
Ethnicity	Number	Percent
Hispanic None US born	76	66.7
Hispanic	26	22.8
Caucasian	7	6.1
German	3	2.6
African American	1	0.9
Native American	1	0.9
N/A	1	0.9
Income	Number	Percent
<10k	60	58.3
<20K	24	23.3
<30K	12	11.7
<40K	7	6.8

Actual Herbal Use

(N=115)

Patients use	Number	Percent
Use herbal products	81	70.4
Use within the last month	44	54.4
Do not use herbal products	34	29.6

Total Instances of Herbal Use

(N=342)

Instances implicated with adverse reactions	62	18.1
Instances implicated with drug interactions	42	12.3
Instances implicated with disease state	37	10.8
Instances used within a 1 month period	94	27.5

Herbal Product

Herbal Product	Number	Percent
Chamomile ^a	46	13.5
Peppermint	31	9.1
Aloe Vera	20	5.9
Garlic ^{a,b,c}	19	5.6
Oregano	15	4.4
Mullein Plant ^a	12	3.5
Lime	11	3.2
Cactus	9	2.6
Eucalyptus	9	2.6
Wormwood ^a	9	2.6
Chaparral ^a	8	2.4
Cinnamon	8	2.4
Hierba de la Vibora	7	2.1
Laurel	7	2.1
Ginseng ^{b,c}	6	1.8
Cat's Claw	5	1.5
Noni (Morinda)	5	1.5
Echinacea ^{a,b}	4	1.2
Kava kava ^a	4	1.2
Rue ^a	4	1.2
St. John's Wort ^{b,c}	4	1.2
Te de Azahar	4	1.2
Tomato Poultice	4	1.2
Camphor	3	0.9

Herbal Product

Herbal Product	Number	Percent
Fibra Kania	3	0.9
Ginkgo Biloba ^{b,c}	3	0.9
Linden Tree Flower	3	0.9
Milk Thistle	3	0.9
Palo Azul	3	0.9
Valerian ^b	3	0.9
Flax oil	2	0.6
Ginger ^{b,c}	2	0.6
Glucosamine ^{b,c}	2	0.6
Herbalife	2	0.6
Hoja de Sen	2	0.6
Marijuana ^a	2	0.6
Olive oil	2	0.6
Te de Boldo	2	0.6
Alfalfa	1	0.3
Anise	1	0.3
Anise Estrella	1	0.3
Arnica	1	0.3
Bananas	1	0.3
Bay leaf	1	0.3
Butcher's Broom	1	0.3
Calcium	1	0.3
Cascara De Mesquite	1	0.3
Cascara Sagrada	1	0.3
Cola de Caballo	1	0.3

Herbal Product

Herbal Product	Number	Percent
Combo	1	0.3
Combo Vitamins	1	0.3
Corn Silk	1	0.3
Cuasia	1	0.3
Epazote	1	0.3
Floressence	1	0.3
Glaucoma	1	0.3
Good Dreams	1	0.3
Guarana Extract	1	0.3
Hawthorn	1	0.3
Hierba Anise	1	0.3
Hierba Arnica	1	0.3
Hierba de Zorica	1	0.3
Honey	1	0.3
Jamaica	1	0.3
Jimson Weed ^a	1	0.3
K.M.with Multivit	1	0.3
Lecithin	1	0.3
Limpieza China	1	0.3
Linaza	1	0.3
Lipton Tea	1	0.3
Mahuang ^{b,c}	1	0.3
Manrubio	1	0.3
Melatonin	1	0.3

Herbal Product

Herbal Product	Number	Percent
Mineral Oil	1	0.3
Nutrial Powder	1	0.3
Orange Tree Flower	1	0.3
Organic Apples	1	0.3
Palo de Brazil	1	0.3
Renosan	1	0.3
Roseox	1	0.3
Sage	1	0.3
Saw Palmeto ^b	1	0.3
Shaklee Herblex	1	0.3
Shizandi	1	0.3
Siete Azahares	1	0.3
Skunk	1	0.3
Snake	1	0.3
Spanish Broom	1	0.3
Sun Flower Oil	1	0.3
Te Milagro	1	0.3
Vit K	1	0.3

a-Herbal products that have been implicated with adverse reactions.

b-Herbal products that have been implicated with drug interactions.

c-Herbal products that could interact with a disease state.

Results

Did it work?	Number	Percent
5	170	57.6
4	53	18.0
3	35	11.9
2	19	6.4
1	18	6.1

Scale (1= Did not work → 5= Worked very well)

How did you learn?	Number	Percent
Relative	212	64.8
Friend	51	15.6
Publication	32	9.8
CAM Provider	15	4.5
Advertisement	7	2.1
Conv. Provider	7	2.1
Pharmacy	2	0.6
Other	1	0.3

Where did you obtain ?	Number	Percent
USA	167	51.4
Mexico	129	39.7
Store	12	3.7
Other	17	5.2

Results

Herbal Use Inquiry	Number	Percent
No	114	99.1
Yes	1	0.8

Informed Physician	Number	Percent
No	312	92.3
Yes	26	7.7

Did it harm you?	Number	Percent
No	334	98.8
Yes	4	1.2

Most Used Herbs By Surgery Patients

HERB (Common name)	POSSIBLE INTERACTIONS OR COMPLICATIONS
Garlic – Ajo	Garlic's active principles interfere with platelet aggregation, potentially retarding blood clotting.
Chamomile – Manzanilla	Allergy and anaphylaxis in a few sensitive individuals, most of whom have been previously sensitized to ragweed or other members of the daisy family (Asteraceae). Concentrated forms of the whole plant (not just the flowers), ingested as tea, could cause uterine contractions. Large amounts, ingested over a long period of time, could impair blood coagulation.
Creosote bush-chaparral - Gobernadora	Liver failure and nephritis in individuals taking concentrated forms, such as capsules or tablets made from twigs and leaves, especially if these have been ingested for more than 4 weeks. Tea made by steeping a branch in boiling water for a few seconds has not been related to any serious intoxication or complication. Patients with hepatitis or cirrhosis should avoid its use.
Cinnamon – Canela	The essential oil must be used with caution, due to its potential toxicity. The tea is not considered toxic.
Peppermint-spearmint -yerbabuena	Tea is not considered toxic. The essential oil derived from mint, however, should not be used internally due to its menthol content.
“Lipton tea” (type not specified)	Green tea is safe to use in moderation. Black tea (fermented green tea), may be astringent and can cause iron depletion. It may also be over-stimulating to the central nervous system due to its caffeine content.
Lime	The peel may be irritating and cause skin sensitization in susceptible individuals. Some patients suffering from migraine may have headaches if ingesting citrus fruits.

Conclusion

With the growing use of herbal products and because most users do not inform their physician, there is increasing concern related to possible herbal related adverse events during surgery. The current study documented at least 141 instances that may lead to herbal related adverse events. Eleven percent of herbal users had documented complications during surgery. A thorough examination of a patients' medication history, including use of herbal products should consistently be performed in order to minimize complications during and after surgery.

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