



## Viscum Album Extract “Mistletoe” Handout

Dr. Gonino was originally intrigued to add subcutaneous and IV mistletoe treatment to our cancer treatment regimen after reading about a case in the Townsend Letter. The patient was diagnosed with stage 4 breast cancer in 2015. At that time the metastasis to both axillae (armpit region) was 8cm (tennis ball size). After 5 weeks of treatment with Salicinium, which we have had in place since the spring of 2018, and subcutaneous mistletoe injection, both axillae were totally flat/normal. No chemotherapy or radiation was used in this case. As of this writing, April 2023 the patient is still living.

Although mistletoe is one of the most researched integrative cancer treatments in Western Europe, it is still a lesser-known offering in North American integrative oncology. There have already been more than 150 published studies on mistletoe therapy. An ongoing trail of Helixor mistletoe at the Sidney Kimmel Comprehensive Cancer Center at Johns Hopkins is driving the new awareness and curiosity about this therapy.

The goal of mistletoe therapy is to create warmth, which often manifests as a low-grade fever, 99.2 to 100.5, immune balance and systemic regulation throughout the body to support optimal conditions for remission and healing.

Lab testing has identified multiple compounds in mistletoe extract, primarily viscotoxins and lectins, which are in varying ways, both directly cytotoxic to cancer cells, as well as immune stimulating. Mistletoe assists in breaching the tumor’s microenvironment and damaging cancer cells. Simultaneously, it supports the white blood cells’ ability to identify the tumor as a threat and take that information throughout the body, to educate the rest of the immune system. This leads to more efficient destruction of cancer cells.

Mistletoe is clinically referred to as *Viscum Album Extract* (VAE). It is recognized as a homeopathic remedy in the United States. It’s use for immune support in cancer care is considered off-label, although recent articles published by the United States National Cancer Institute recognize and respect VAE therapy.

Mistletoe can be used safely as an adjuvant therapy along with almost all other conventional and integrative treatments. Its power is in its ability to enhance the effects of other treatments and mitigate side effects (i.e., nausea, fatigue, liver damage) during more aggressive conventional treatments such as chemotherapy and radiation.

Mistletoe’s direct anti-cancer effects include:

1. Induce apoptosis. Apoptosis means programmed cell death. This is achieved through direct cytotoxic effects by breaking down tumor cell membranes and indirectly by supporting our bodies NK and CD8 cells which are able to kill cancer cells.
2. Limit metastasis. VAE appears to reduce the cancer’s ability to expand its own blood supply by lowering Vascular Endothelial Growth Factor. VAE also appears to inhibit protein synthesis by the tumor cells. These effect the tumor’s ability to spread.

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3. Repair and stabilize DNA. When healthy cells are damaged by cancer or chemotherapy or radiation, VAE appears to stabilize and repair DNA. In a European Journal of Cancer article, researchers postulated, “the increase in DNA repair could be due to a stimulation of repair enzymes by lymphokines or cytokines secreted by activated leukocytes, or an alteration in susceptibility to exogenic agents resulting in less damage.”
4. Mistletoe therapy both damages the tumor and empowers the immune system to join in with that process of identifying and eliminating tumor cells.

Below is the foreword in the book “MISTLETOE and the Emerging Future of Integrative Oncology”.

“Human disease is an elaborate dance between behavior, our environment, and chance. Medicine tries to tame human disease with science, but when our knowledge falls short, disease wins. This is too often the case with cancer. We spend billions of dollars each year trying to better understand it and develop tools to ease its effects.

I am a cancer doctor. I have treated patients for over twenty years and trained and worked at some of the most prestigious medical institutions in the world. I have had the opportunity to work with amazing colleagues—nurses, doctors, social workers, administrators, and many others who made a tremendous impact on cancer and other diseases and who truly helped humanity. I focus on cancer genetics and use this information to help design new ways to diagnose and treat cancer. I am fortunate to have had some great successes in conventional cancer research and treatment.

I have also had the privilege of meeting some of the most wonderful people as patients, along with their families. One can never predict how the shock of a cancer diagnosis will impact a person. I have seen the full range of human emotions from fear to courage to indifference. The human spirit is so diverse, and each individual is unique in how they confront this challenge.

It was through such a connection with one of my patients that I came to learn about mistletoe. As a faculty member at Johns Hopkins in Baltimore, I met Ivelisse Page, a young woman with Stage IV colon cancer. When cancer reaches the stage, it is a lethal condition. I was trained in and had investigated modern colon cancer treatments, but Ivelisse declined most of the standard approaches. She was open to surgery, but wanted no chemotherapy or radiation. She did not want experimental targeted therapies. Rather Ivelisse focused on naturopathic approaches including an alkaline diet, mistletoe therapy, and most importantly, her faith.

This approach was certainly unconventional to me. It wasn’t within the guidelines at Johns Hopkins or any other academic medical center in the United States. I could honestly say that no one at that time at my institution was using or had used mistletoe in their management of cancer. I would never have thought of mistletoe therapy, or taken it seriously, if I hadn’t met Ivelisse. She was the spark that introduced me to a new world.

Ivelisse had a cancer that has a notoriously high death rate and rapid recurrence and progression rate. She’d seen the disease take multiple family members. Instead of fighting what seemed a losing battle, Ivelisse opted for an integrative approach that might support her quality of life during whatever remaining time she had. In partnership with Dr. Peter Hinderberger, who specializes in anthroposophic cancer care, we treated Ivelisse with mistletoe therapy. Dr. Hinderberger managed the mistletoe therapy and I, with modern tools, monitored her progress after surgery and during her anthroposophic care. I was uncomfortable at times. But with each CT scan and lab test, we continued to see no sign of cancer recurrence. None of her care providers had expected this. This science was not obvious to me. But now, more than a decade later, Ivelisse is disease-free and thriving.

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I can only speculate at this point regarding the biologic basis of how mistletoe therapy affected Ivelisse's body and, more importantly, her cancer. I suspect it helped activate her immune system, so it could fight the cancer.

Because of Ivelisse's experience, and that of many other patients like her, we initiated a clinical trial at Johns Hopkins to study mistletoe's mechanism of action in patients with advanced cancer. The study is ongoing, and much more work is needed in the laboratory and at a clinical level. But I am pleased to see conventional cancer researchers seriously exploring this therapeutic option.

While I have learned a lot throughout my career, one of the most important lessons is this: *We can grow in unexpected ways when we listen to new perspectives.* Ivelisse and Dr. Hinderberger taught me that there may be other ways to care for patients with cancer, and we need to explore these options with the same passion with which we explore conventional approaches. As a physician and a professor, one who is used to being the teacher, it is important to me to keep an open mind. I strive to listen, so I may continue to learn. The best and most important lessons often come from where I least expect them."

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