

Johns Hopkins Psilocybin Cancer Study

BACKGROUND:

Patients with cancer often develop chronic, clinically significant symptoms of depression and anxiety that have a significant negative impact on the quality of their life. At their core, these symptoms often reflect a crisis in spirituality and religious faith. Spirituality may influence psychological coping in the face of advanced illness and is associated with decreased anxiety and depression. However, research demonstrating an association between spirituality and psychological response to serious illness is largely epidemiological and correlational, and little is known about translating such an association into an effective intervention. Occasioning a primary mystical experience may represent such an intervention. Primary mystical experience, often thought of as a gift of divine grace, creates the potential to produce transformative change in patients' attitudes towards illness and death, their quality of life, and the choices they make in the time that remains.

Psilocybin, a psychoactive substance found in *Psilocybe* mushrooms, and related compounds have been used as sacraments for millennia within certain cultures in order to induce mystical or spiritual experience. These subjective experiences share remarkable similarities to classical mystical experiences achieved by non-pharmacological methods such as prolonged fasting, prayer, and meditation. Although there is a long anthropological history of the association of such compounds with spirituality, little is known scientifically to validate such an association. Our laboratory recently completed a rigorous double-blind prospective study demonstrating that under supportive conditions, a high dose of psilocybin can help occasion a primary mystical experiences having lasting personal meaning and spiritual significance.

THE STUDY:

Our current study is seeking volunteers with a diagnosis of cancer to participate in a scientific study of states of consciousness brought about by psilocybin, given in a comfortable, supportive setting. Volunteers enrolled in the study will receive careful preparation and 2 sessions in which they will receive psilocybin. Structured guidance will be provided during the session and afterwards to facilitate integration of the experiences. Questionnaires and interviews will be used to assess the effects of the substance on consciousness, mood, and behavior.

VOLUNTEER POPULATION:

Patients are eligible if they have a potentially life-threatening cancer diagnosis without CSN involvement and they seem to be experiencing anxiety or depressed mood as a result of their illness. Patients with and without disease progression are eligible, but patients with no disease progression are only eligible if at least 1 year has elapsed since their diagnosis. Patients who have decided not to undergo cancer therapy are also eligible. Our physician and screening staff will determine whether volunteers meet inclusion and exclusion criteria.

For individuals who are consented and screened, we will notify the referring physician: 1) whether the individual enrolled in the study or not, and 2) if disqualified, the reason for the disqualification.

Abbreviated inclusion and exclusion criteria -- these will be evaluated by the study investigators

Inclusion criteria

Volunteers must:

- Be 21 to 70 years old
- Have a cancer diagnosis that is potentially life-threatening. Patients with disease progression are eligible. Patients with no disease progression or no disease recurrence are eligible if at least 1 year has elapsed since their diagnosis.
- Patients receiving chemotherapy, hormonal therapy, radiation therapy, biologic therapies may participate while receiving those therapies. Continuing hormonal therapy, chemotherapy, or radiation treatment is acceptable if the patient is tolerating the therapy or treatment in a sufficient fashion to allow administration of oral psilocybin.
- Have an ECOG performance status of 0, 1, or 2.
- Have anxiety or depressed mood -- Psychiatric diagnosis will be determined by BPRU staff.
- Agree that for one week preceding each psilocybin session, he/she will refrain from taking any nonprescription medication, nutritional supplement, or herbal supplement except when approved by the research team. Exceptions will be evaluated by the research team and will include acetaminophen, non-steroidal anti-inflammatory drugs, and common doses of vitamins and minerals.

Exclusion criteria

General Medical Exclusion Criteria

- Cancer with known CNS involvement, or other major CNS disease. In addition to diagnostic results provided by the referring physician, patients will undergo a neurological exam performed by our BPRU physician. Any patient with evidence of a focal deficit will be excluded.
- Patients will be excluded if they are in treatment in another clinical trial involving an investigational product or device.
- Hepatic dysfunction (GGT, AST, or ALT > 3 x upper limit of normal; Tot Bili > 2.0 mg/dl)
- Known paraneoplastic syndrome or "ectopic" hormone production by the primary tumor such as the patient could have or be at risk for hypercalcemia, Cushing's syndrome, hypoglycemia, syndrome of inappropriate antidiuretic hormone secretion, or carcinoid syndrome
- Cardiovascular conditions: uncontrolled hypertension, angina, a clinically significant ECG abnormality (e.g. atrial fibrillation), TIA in the last 6 months, stroke, peripheral or pulmonary vascular disease (no active claudication)
- Blood pressure <140 systolic, <90 diastolic
- Epilepsy with history of seizures
- Renal disease (creatinine clearance < 60 ml/min using the Cockcroft and Gault equation)
- Insulin-dependent diabetes; if taking oral hypoglycemic agent, then no history of hypoglycemia
- Females who are pregnant, nursing, or are not practicing an effective means of birth control
- Currently taking on a regular (e.g., daily) basis: investigational agents, psychoactive prescription medications e.g., benzodiazepines), medications having a primary pharmacological effect on serotonin neurons (e.g., odansetron), or medications that are MAO inhibitors. Long-acting opioid pain medications (e.g. oxycodone sustained release, morphine sustained release -- which are usually taken at 12 hour intervals) will be allowed if the last dose occurred at least 6 hours before psilocybin administration; such medication will not be taken again until at least 6 hours after psilocybin administration.

Psychiatric Exclusion Criteria

- Current or past history of meeting DSM-IV criteria for Schizophrenia, Psychotic Disorder (unless substance-induced or due to a medical condition), or Bipolar I or II Disorder
- Current or past history within the last 5 year of meeting DSM-IV criteria for alcohol or drug dependence.
- Have a first or second degree relative with schizophrenia, psychotic disorder (unless substance induced or due to a medical condition), or bipolar I or II disorder.
- Currently meets DSM-IV criteria for other psychiatric conditions judged to be incompatible with establishment of rapport or safe exposure to psilocybin.