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# Suicide in cancer patients undergoing palliative care: A report of two cases

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## ABSTRACT

**Introduction.** Suicide represents a major public health problem worldwide, and cancer patients might have vulnerability factors which increase suicide risk. There are multiple factors associated with this tragic outcome, including those stemming from the disease itself, mental illness and social, personal and spiritual factors. Although previous reports have identified a suicide rate which ranges from .03-7% among cancer patients undergoing palliative care, this has not been studied in Mexico. **Objective.** This study sought to report the cases of suicide in patients with cancer undergoing palliative care at a large cancer reference center. **Method.** A retrospective review of records was performed between 2018-2019 for patients treated at the Palliative Care Service of the Instituto Nacional de Cancerología in Mexico City. Records for patients who committed suicide were reviewed to describe factors associated with this outcome. **Results.** Among all deaths identified during the record review, two were due to suicide (.09%). The patients were one female and one male, 60 and 42 years of age, diagnosed with breast cancer and gastroesophageal junction cancer, respectively, associated with tobacco and alcohol consumption, as well as several economic, social, and familial stress factors. One of the patients was identified as likely having major depressive disorder. **Discussion and conclusion.** Deaths might be underreported in our population. A systematic evaluation is required in order to establish and detect suicidal behavior risk factors, and a follow-up plan for all these patients.

**Keywords:** Suicide, suicide risk, palliative care, cancer, end of life.

## RESUMEN

**Introducción.** El suicidio representa un problema de salud pública en todo el mundo. Los pacientes con cáncer pueden tener factores de vulnerabilidad para presentar conducta suicida. Hay múltiples factores asociados con este fenómeno, incluidos los derivados de la enfermedad en sí, enfermedades mentales y factores sociales, personales y espirituales. Aunque hay reportes previos que describen una tasa de suicidio que va del .03 al 7% entre los pacientes con cáncer que reciben cuidados paliativos, esto no se ha estudiado en México. **Objetivo.** Reportar los casos de suicidio en pacientes oncológicos que reciben cuidados paliativos en un centro oncológico de referencia. **Método.** Se trata de un estudio retrospectivo, donde se revisaron los expedientes de los pacientes atendidos en el Servicio de Cuidados Paliativos del Instituto Nacional de Cancerología entre 2018-2019. Se revisaron los expedientes de los pacientes que se suicidaron para describir los factores de riesgo que presentaban. **Resultados.** Entre todas las muertes identificadas durante la revisión de expedientes, dos se debieron a suicidio (.09%). Los pacientes fueron una mujer y un hombre, de 60 y 42 años, diagnosticados de cáncer de mama y de una unión gastroesofágica, respectivamente. Los factores asociados fueron el consumo de tabaco y alcohol, así como varios factores de estrés económico, social y familiar. Se identificó, asimismo, que uno de los pacientes padecía trastorno depresivo mayor. **Discusión y conclusión.** Es posible que los suicidios estén infrarreportados en nuestra población. Se requiere una evaluación sistemática para establecer y detectar factores de riesgo de conducta suicida, y un plan de seguimiento para todos estos pacientes.

**Palabras clave:** Suicidio, riesgo suicida, cuidados paliativos, cáncer, final de vida.

## INTRODUCTION

Suicide is a leading cause of death in the world, and as such represents a major public health problem. In Mexico, suicide has increased over the last decades (Borges, Orozco, Benjet, & Medina-Mora, 2010; Fernández-Niño et al., 2016). This is a complex phenomenon, with many associated risks, including social and individual factors. Among the latter, diseases which are characterized by pain, physical impairment, and anguish are a well-established risk factor (Saxena, Krug, Chestnov, & World Health Organization, 2014).

Cancer patients are known to have 2-4 times as much risk for suicide, when compared with the general population (Amiri & Behnezhad, 2019; Kumar, Chaudhary, Soni, & Jha, 2017; Zaorsky et al., 2019), with the highest risk appearing in the year following cancer diagnosis (Choi & Park, 2020; Henson et al., 2019). In this setting, palliative care has been described as a protective factor against suicide, nonetheless there are reports in the literature which describe suicide in palliative care patients (O'Connor, Groom, Watson, & Harris, 2016). Among cancer patients, suicide has been identified in .03-7% of subjects (Choy, 2017; Filiberti et al., 2001; Grzybowska & Finlay, 1997). Among the well-known risk factors for suicide in cancer patients are age > 50 years, male sex, low economic resources, low scholarsity, inadequate social support, poor functional status, physical symptoms (including pain), a history of alcohol and tobacco use (Henson et al., 2019; Sullivan et al., 2018), history of mental illness (mainly depression; Filiberti et al., 2001; Keaton et al., 2019), and psychological factors including anxiety, impulsivity, hopelessness, irrational beliefs, negative coping styles, poor spiritual wellbeing, and perceived loneliness (Lee et al., 2013; Zhang, Law, & Yip, 2011). Primary tumor sites have also been associated with increased suicide risk, including esophageal, pancreatic, bone, and lung tumors (Amiri & Behnezhad, 2019; Du et al., 2020; Kawashima et al., 2019; Kumar et al., 2017). In the specific scenario of cancer patients undergoing palliative care, risk factors include pain, psychological distress, demoralization, loss of dignity, desire to hasten death and delirium (Du et al., 2020; Grzybowska & Finlay, 1997; Rodríguez-Mayoral, Ascencio-Huertas, Verástegui, Delgado-Guay, & Allende-Pérez, 2019a).

Though suicide is infrequent in patients undergoing palliative care, the cases when it does appear have a considerable impact (Saxena et al., 2014). This phenomenon represents a monumental challenge for healthcare professionals and generates a pressing need to establish screening strategies to identify patients at a potential risk of suicide in this population (Choy, 2017). There are several strategies which attempt to prevent suicide, focused mainly on early detection of depressive symptoms (Kawashima et al., 2019). Further, specific pharmacological strategies, and psychological interventions have been proven to signifi-

cantly reduce suicide risk in subjects with identifiable factors (Fan et al., 2017; Grunebaum et al., 2018; Hopko et al., 2011; Rodríguez-Mayoral, Pérez-Esparza, Domínguez-Ocadio, & Allende-Pérez, 2020).

The objective of this study was to report the cases of suicide among patients with cancer undergoing palliative care at a large, national reference oncology center: the Instituto Nacional de Cancerología (INCan) in Mexico City.

## METHOD

This was a retrospective study based on a review of patient records among patients who attended the Palliative Care Service at the INCan between 2018-2019. Patients whose file included a death certificate were identified, and those with suicide as cause of death were retrieved to obtain clinical and sociodemographic characteristics.

Palliative care at INCan is usually offered to patients who are diagnosed with an advanced-stage neoplasm, and who present one or more of the following conditions: a) an Eastern Cooperative Oncology Group (ECOG) performance status of  $\geq 3$  (Oken et al., 1982), or b) uncontrolled pain or symptoms (including dyspnea, seizures, persistent vomiting); family distress; frequent hospitalizations (over two in one month); psychological, social or financial stress (i.e., patients who live far from the hospital center and require physical assistance, or have psychological and/or psychiatric symptoms); and hospitalization lasting more than one week without significant improvement (Allende-Pérez, Verástegui-Avilés, Chavira-Estefan, Tejeida-Bautista, & Domínguez-Ocadio, 2013).

For the purposes of this study, as suicide was defined the act of voluntarily taking one's life or as the result of a self-inflicted lesion or overdose which led to death (Gutiérrez-García, Contreras, & Orozco-Rodríguez, 2006).

## Ethical considerations

The study was approved by Institutional Review Board (Instituto Nacional de Cancerología, INCan) with number (2021/013).

## RESULTS

### Clinical context

Through the period 2018-2019, a total of 10,844 first-time patients were attended at the INCan for cancer care; the palliative care service offers a multidisciplinary team of experts across different disciplines to provide palliative care. Throughout 2018-2019, the palliative care service provided care for 3,721 first-time patients. Among the patient records

reviewed in this time period, a total of 2,198 deaths were recorded (Departamento de Bioestadística, 2020), of which  $n = 2$  were due to suicide (.09%).

### Case study (subject 1)

This was a male patient, 42 years of age, who attended school for eight years. The patient worked as a farmer, was married, and had two offspring (aged 17 and 21 years). He was the main economic provider in their home. The patient reported a positive history for tobacco use of 26 years (Tobacco index: 26), and alcohol abuse for 25 years on a weekly basis. The patient was diagnosed with a stage IV gastroesophageal junction adenocarcinoma in 2015. He underwent treatment with chemotherapy and radiotherapy, with a partial response and a stable disease thereafter. In March 2018 he presented a progressive disease and reinitiated oncological treatment. During his last visit to his oncologist he was notified of a new progression, without being candidate for systemic treatment. He was referred to the Palliative Care Service and received his first consult on the very same day he was referred. In this first visit, several uncontrolled symptoms were identified, including oppressive epigastric pain, fatigue, oral intolerance, and insomnia. In terms of the emotional sphere evaluation, the patient presented a deep feeling of guilt from tobacco use. Also, he was aware of the diagnosis and the prognosis; as for the spiritual sphere, a loss of meaning and coherence was also identified. Three days following this initial evaluation the patient committed suicide by hanging. This event was notified to the health care team by the patient's family through a telephone call, and support was requested for remaining family members (wife and offspring). During grief therapy, the family members emphasized that the patient was the main economic provider, with a patriarchal family dynamic. The patient was described as having difficulties in facing the physical and functional limitations derived from the oncologic disease, with low tolerance for the uncontrolled physical symptoms, particularly pain and insomnia, aside from the presence of specific personality traits (he was described as impulsive and with low tolerance by the family). Lastly, family members mentioned that the patient presented depressive symptoms associated with the fact that he was no longer candidate for oncologic treatment, and that he repeatedly mentioned "if a day comes when I have no cure, I will kill myself."

### Case study (subject 2)

The second was the case of a female patient, 60 years old, who identified herself as catholic and had attended school for nine years. She was a widow, who had two offsprings (38 and 41 years of age) and one granddaughter. One of her offsprings had a history of substance abuse and was currently homeless. Her eldest son was the economic provider.

She worked as a housekeeper and had a positive history of tobacco use (tobacco index: 3).

The patient was diagnosed with stage IIIA breast cancer in 2005. She underwent treatment with chemotherapy. In May 2006 she underwent a radical mastectomy followed by radiotherapy, and continued treatment with tamoxifen for five years. In 2019, after 12 years of disease-free survival, the disease recurred, for which the patient underwent palliative chemotherapy with carboplatin/taxol, with no positive response. In several oncologic consults the patient and her family members are described as presenting considerable sadness. Pain management was initiated with tramadol, followed by oral morphine (90 mg/day). In November 2019 she was referred to the Palliative Care Service. During the initial evaluation, the palliative care team identified uncontrolled symptoms, including pain (8/10), dyspnea (8/10), depression, anxiety, and insomnia (5/10). During the psychological evaluation, the patient referred sadness, hopelessness, feelings of guilt from tobacco use, and initial insomnia which increased when other symptoms were uncontrolled (pain and constipation). During her follow-up consult, the patient continued with uncontrolled pain, and referred ideas of death and suicide associated with this symptom, which prompted a new adjustment in her pain medications, modifying the administration route (from oral to subcutaneous). In terms of the psychosocial spheres, the patient presented symptoms associated with anxiety and depression, uncertainty regarding the prognosis, and with important communication problems with her family members and a sense of handicap for economic dependence on her son and mother. The patient had also mother-filial problems, and an important deficit in terms of resources for facing her diagnosis and prognosis. Four days after her last visit to the Palliative Care Service, the patient committed suicide by jumping into the void (12.5 m, approximately). During grief therapy, the family members mentioned that the patient had suicide and death ideas and expressed them on several occasions, not only in the presence of uncontrolled symptoms such as pain, but also in the face of a complicated family dynamics, with emotional fragility due to the recent grief from her partners' passing and mother-filial problems.

## DISCUSSION AND CONCLUSION

Suicide entails and preventable public health problem, though unfortunately the current trends show an increase for this tragic outcome in the last decades in Mexico (Fernández-Niño et al., 2016). Patients with cancer diagnoses, including those undergoing palliative care, are at an increased risk for suicidal behavior. However, the issue has remained unstudied among the Mexican population of cancer patients. To the best of our knowledge, this is the first study to report this outcome in this population.

Among the patients who attended the Palliative Care Service at INCan between 2018-2019, two cases of suicide were reported (.09%) with a similar outcome to previous reports (Filiberti et al., 2001). Factors associated with suicidal behavior include having economic difficulties and a history of tobacco and alcohol use (Mondragón, Saltijeral, Bimbela, & Borges, 1998; Sullivan et al., 2018). Clinical characteristics associated with this outcome did not include currently undergoing treatment and tumor location in the case of the first patient (Amiri & Behnezhad, 2019). In the second case, it is likely that the suicide behavior was related to the presence of depression in addition to demoralization, as previously reported (Kolva, Hoffecker, & Cox-Martin, 2020), and cognitive impairment which was extensively described by Carreira et al. (2018). In both instances there are clear physical and psychosocial factors which could have negatively impacted the disease and generated difficulties in both patients regarding their coping mechanisms to face the physical, emotional, and economic deterioration associated.

As a result of these case studies and the extensive literature search, we propose the following evaluation to screen and manage patients at risk of suicide. Foremost, to standardize the evaluation procedure for all patients is a priority, with an evaluation which includes a directed search for depression, desire to hasten death, death/suicide thoughts, emotional distress, and anxiety. Further, treatment algorithms must be established and carefully followed in order to guide management decisions for these psychopathologies. Several instruments can be used to identify symptoms of depression and these even contain a specific item regarding suicide risk. These include the Brief Edinburgh Depression Scale (BEDS) (Rodríguez-Mayoral et al., 2019b) and the 9-item Patient Health Questionnaire (PHQ-9) (Thekumpurath et al., 2011). Further, the Schedule of Attitudes Toward Hastened Death (SAHD) can also be included (Bellido-Pérez et al., 2018; Monforte-Royo et al., 2017) and the Scale of Suicide Ideation (Beck, Kovacs, & Weissman, 1979) to identify suicidal risk. These instruments can provide palliative care experts guidance to identify when to seek assistance from a mental health professional.

Several psychotherapeutic strategies have proven useful for decreasing depressive symptoms and consequently suicidal behavior. These include Behavioral Activation and Problem-Solving Therapy (Hopko et al., 2013; 2011), spiritual support (Kolva et al., 2020), and Acceptance and Commitment Therapy (Hinrichs, Steadman-Wood, & Meyerson, 2020). In terms of pharmaceutical interventions, ketamine has proven to reduce suicidal behavior, though current clinical trials lack methodological strength to generate robust conclusions (Fan et al., 2017; Grunebaum et al., 2018; Kawashima et al., 2019). As a result, it is important to explore novel treatment strategies which focus on suicide risk factors specific for cancer patients, since the evidence in this population is scarce regarding suicide prevention.

It is important to highlight that the information presented has several limitations, including the small number of patients detected ( $n = 2$ ) who committed suicide which limits the assessment of risk factors. Moreover, this is a retrospective record revision, and therefore a reporting bias may also be present and limit the conclusions drawn from this study. Last, there is the lack of a psychological autopsy in order to acquire more data regarding risk factors for this outcome.

Suicide as an outcome is scarcely studied in the context of neoplastic diseases. As such, there is a pressing need to establish protocols which include detailed evaluations and an active screening for psychopathological alterations to establish opportune prevention strategies for all patients who present risk factors for suicide.

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### Conflict of interest

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