**Acupuncture as a treatment within integrative health for palliative care – a brief narrative review of evidence and recommendations.**

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**Abstract**

*Background*: Acupuncture has one of the fastest developing evidence bases in Complementary Medicine and is one of the leading therapies included within integrative health care. This narrative review includes two separate parts: the first is about evaluation of the current evidence status in reviews on acupuncture and the second examines and gives examples of available recommendations on acupuncture in treatment guidelines from health care experts and public health organizations recommending acupuncture as a viable treatment in patients in palliative care.

*Methods*: Electronic searches were performed in Pubmed using the terms ‘acupuncture’ + ‘palliative’ and adding the term ‘safety’ to find review articles documenting safety and evidence of effectiveness of acupuncture for treatment of symptoms in palliative care patients. Treatment guidelines that recommend use of acupuncture for symptom control in palliative care were found by searching through a database currently under construction by the lead author.

*Results*: Acupuncture shows emerging evidence for 17 indications in palliative care. Examples were found and presented of publications recommending acupuncture for treatment of symptoms for patients in palliative care from Government, public health, oncology and medical expert sources. The most publications are in oncology, but other conditions were found and a number were found in paediatric care.

*Conclusions*: While the evidence for use of acupuncture to treat symptoms in palliative care patients is relatively weak, the evidence base is growing. Experts worldwide are also increasingly recommending acupuncture as a treatment for symptoms in palliative care. Since acupuncture is a safe, non-pharmacological treatment but with small, clinically significant effects, these recommended uses appear as pragmatic efforts to bridge the gap of treatment options available to this patient group.

**Introduction**

Acupuncture used since 100 BC emerged as a treatment for a variety of problems both for painful and non-painful, acute and chronic conditions.1, 2 It is one of a number of therapies within the broader domain of traditional East Asian Medicine (TEAM) and is now practiced around the world both alone and in conjunction with other TEAM and Western medical therapies.3

Acupuncture is considered as a form of Complementary and Alternative Medicine (CAM), and its research base has developed considerably since the 1970s and especially since the 1990s.4 Acupuncture treatment is now becoming routinely used in different countries.5 A recent survey found that 22.4% of physicians refer for acupuncture in the US6 and recently acupuncture has been included within billable medical services by the American Medical Association.7 A 2007 survey of palliative care centres in Canada found that 9% provided and 49% allowed acupuncture to be provided in palliative care.8 In a 2016 German survey of CAM use in palliative care in oncology, the authors found that 40% of oncology patients used CAM, of these 64.5% used acupuncture - 25.8% of oncology patients in palliative care.9

Integrative Health

The field of Integrative Health care has developed considerably in recent years and has “evolved to

describe the combination of conventional medicine with complementary medical practices for which there is evidence of safety and efficacy”10 and more recently as “healing oriented medicine that takes account of the whole person (body, mind, and spirit) including all aspects of lifestyle; it emphasizes therapeutic relationships and makes use of all appropriate therapies, both conventional and alternative”.11 Integrative care in palliative medicine has grown considerably in recent years. Ten years ago, a survey of hospice care in Washington State found 86% of hospices used complementary and alternative medicine, 32% using acupuncture.12 In a recent review of global trends for the utilization of integrative medicine in oncology, the authors document that 22% of oncology centres in European countries and up to 65% in Australian are now using integrative medicine, with acupuncture often being the most commonly used therapy.13

Palliative care

The World Health Organization defines palliative care as “the prevention and relief of suffering of adult and paediatric patients and their families facing the problems associated with life-threatening illness.” 14 This includes the bio-psycho-social suffering of patients and family members.15 There are a number of key principles (‘Golden Rules’) in palliative care; among these are to always consider non-drug approaches and that patient choice is very important.16 In recent years palliative care has adopted a focus on being patient- and family-centred focusing on management of distressing symptoms within the framework of patient and family values, preferences and beliefs,17 which aligns integrative health approaches conceptually and practically with palliative care approaches.18

The primary aim of palliative care is to relieve suffering and improve quality of life.19 To this end strong treatment approaches are often necessary such as opiate prescriptions to manage very distressing symptoms such as pain. Many other methods that are more gentle and easier for the patient to tolerate may also be recommended such as a gentle fan to assist with breathing in dyspnoea.20 But symptoms in palliative care are often difficult to treat with a recent review of pharmacological therapies used in the last days of life showing “a lack of evidence concerning the effectiveness and safety of palliative drug treatment in dying patients”.21 As a consequence, therapies that may not have a strong evidence base are often recommended because there are few evidence-based-treatment options available, or because they are better tolerated by the patient. An example is the use of acupuncture for cognitive disturbance.22 Another example is the use of acupuncture in the treatment of aromatase inhibitor arthralgia, where while the evidence is relatively weak, it has been found among the most effective therapies to date.23 It is also common practice in palliative care to give greater weight to patient preferences, for example less use of opiates and more use of milder analgesic treatments so that the patient can remain mentally clearer. In palliative care it is common that the patient requires a number of different therapies at the same time to handle the complex medical picture for each individual. When multiple therapies are administered at the same time, the selected strategy becomes a form of ‘complex intervention’.24, 25 When testing complex interventions or a therapy within a complex intervention package, it can be difficult and sometimes not possible to perform explanatory (placebo-controlled) trials.25, 26 Consequently, when evaluating evidence in palliative care, although sham or placebo intervention trial evidence is considered, evidence derived from other sources such as pragmatic trials may often be given more weight.25-30 Thus, when considering the use of acupuncture in palliative care, non-sham trial-based evidence may be given more weight. Performance of explanatory (sham-controlled) trials of acupuncture is controversial since no sham interventions are inert31, 32 creating potential bias against acupuncture and routine underestimation of treatment effects.33-35 Thus, in the evaluation of evidence for acupuncture, palliative care specialists knowledgeable about this problem will tend to give greater weight to pragmatic trial evidence. As acupuncture comes to be used more within palliative care it will be important for palliative care specialists to provide education for acupuncturists about the highly specialised needs of these patients, so as to ensure a smooth transition and integration of acupuncturists into the health care team.36

Although there is clear evidence that acupuncture is a safe procedure when practised by qualified practitioners,37-44 there are additional safety concerns about its use with patients in palliative care. This has partially been addressed for use of acupuncture in patients with cancer,45, 46 but needs further attention for palliative care.

What is the current evidence for the effectiveness and safety of acupuncture in palliative care and to what extent have experts in palliative care recommended its use? This short narrative review will summarise evidence of acupuncture in palliative care from review articles and explore how medical experts in different countries have recommended it in palliative health care treatment guidelines.

**Methods**

This narrative review includes two separate parts: the first is about evaluation of the current evidence status in reviews on acupuncture and the second examines and gives examples of available recommendations on acupuncture in treatment guidelines. A search in Pubmed was made on May 11, 2020 using the terms ‘acupuncture’ + ‘palliative.’ The results were then screened to find review papers that assess or summarise the evidence for acupuncture in palliative care in English from January 2005 to the present. An additional search of Pubmed was made using the terms ‘acupuncture’ + ‘safety’ + ‘palliative’ with no time constraints. The results were also screened for publications addressing safety of acupuncture in palliative care.

One of the authors (SB) has a grant to establish an online registry of publications that make statements or recommendations about use of acupuncture, including clinical practice guidelines. This registry and the methodology for finding relevant publications is discussed in a previous publication.5 For the current paper, since the on-line registry is not yet complete, it was not possible to do a formal search of the data base. Instead, for this narrative review, SB searched within his database on January 15, 2020 for treatment guideline publications that make statements about use of acupuncture for patients in palliative care. The purpose being to find illustrative examples of recommendations about use of acupuncture for patients in palliative care covering a number of areas such as publications issued by Government Health Department or Ministries of Health, National Health Service-related publications, publications from oncological and other specialist groups.

**Results**

**Evidence for acupuncture in palliative care**

The initial Pubmed search with the terms ‘acupuncture’ + ‘palliative’ found 212 articles. Screening these for review articles published in English between 2005-2020 yielded 28 review papers including 11 systematic reviews, addressing acupuncture in palliative care.47-74

From the 28 review papers found in the Pubmed search the evidence for acupuncture in palliative care was found to be conflicting or insufficient in some reviews for pain,47-49 neuropathy,50 dyspnoea,51 hot flashes,47 nausea and vomiting,50 xerostomia,47 hiccups,52 insomnia,53 leucopenia,47 chronic kidney disease,54 cognitive effects.55 But acupuncture was also found to be effective or showing promising results for palliative care in general56 and in the treatment of specific symptoms: pain,57-60 cancer pain,50, 53, 61-66 nausea and vomiting,47, 53, 59-64, 66-68 neuropathic pain, 64, 69 dyspnoea,20, 59, 64, 67 hot flashes,50, 59, 62, 63, 66, 68, 70 xerostomia,50, 53, 54, 64, 71, 72 anxiety, depression, sleep problems,62, 66 fatigue,50, 53, 57, 59, 62, 65, 66, 68 cognitive effects,22 hiccups,68 infertility,65 neutropenia,53 lympoedema,66 dysphagia.73 Most of the evidence has been in cancer care, but some has emerged in other areas.22, 67 Most evidence relates to symptoms that are side effects of conventional cancer treatments, so for example, very little is known about the effectiveness of acupuncture for nausea and vomiting in advanced terminal care, unrelated to chemotherapy. An important target of therapy in palliative care is to improve quality of life (QoL).19 Improvement across a range of symptoms can significantly influence QoL, and reviews indicate that acupuncture benefits QoL in palliative care.57, 74

Seven papers were found that discuss safety of acupuncture in palliative care .50, 53, 60, 63, 64, 68, 75  Filshie focuses on addressing safety issues,75 the other papers generally conclude that acupuncture can be a safe procedure in palliative care if administered by qualified practitioners and provided key safety issues are addressed, 50, 53, 63, 64, 68 similarly for children.50, 60

**Recommendations to use acupuncture in palliative care**

Within the database held by SB from which the registry of treatment guidelines that make recommendations related to acupuncture is being constructed, recommendations were found about the use acupuncture in palliative care for 20 symptoms.. Of these three publications found the evidence for acupuncture to be insufficient to recommend it for nausea and vomiting,76 pain,77 and breathlessness.78 Few negative publications have been found so far, in part since the more detailed searching needed for data-entry in the registry has not been done yet. Below are examples from a number of different sources that have recommended use of acupuncture in palliative care..

*National and State government recommendations in palliative care*

Acupuncture is recommended by the Australian Government for palliative care in the elderly,79 see also (https://www.palliaged.com.au /), and pain in palliative care (https://www.healthdirect.gov.au/, https://palliativecare.org.au/). Australian State Governments also recommend acupuncture in palliative care, for example: Victoria State government – for pain ([www.betterhealth.vic.gov.au](http://www.betterhealth.vic.gov.au)), Tasmanian State government – for pain, nausea and vomiting (<http://www.dhhs.tas.gov.au/>). The US government’s National Cancer Institute suggests integrative therapies including acupuncture may be helpful in palliative care (https://www.cancer.gov/publications/pdq/information-summaries/supportive-care & https://www.cancer.gov/publications/pdq/information-summaries/cam).80

*National Health Service recommendations in palliative care*

NHS Scotland recommends acupuncture for relief of dyspnoea, cancer pain, xerostomia, CINV, menopausal symptoms, fatigue, hiccups, anxiety and mood problems in palliative care (https://www.nhsinform.scot/care-support-and-rights/palliative-care/symptom-control/, <http://www.palliativecareguidelines.scot.nhs.uk/media/1182/hiccups.pdf>). The NHS Greater Manchester Strategic Clinical Network recommends acupuncture for fatigue (http://www.sah.org.uk/media/496763/scn\_pain\_symptom\_control\_guidelines\_june\_2015.pdf), the NHS Northern Devon Healthcare recommends acupuncture for hiccups (http://www.northdevonhealth.nhs.uk/wp-content/uploads/2016/06/Symptom-Management-in-Palliative-Care-Guidelines-v1.4.pdf). Wessex Palliative Physicians recommends acupuncture for pain, neuropathic pain, nausea and vomiting, dyspnoea, hyperhidrosis.16

*Oncological palliative care recommendations*

In a previous publication we reported on the number of recommendations on the use of acupuncture in oncology,81 while this included palliative care publications it did not specify them. Here are a few examples from the current search: in the US the National Comprehensive Cancer Network recommends acupuncture in palliative care (https://www.nccn.org/).82 The Cancer Council Victoria recommends acupuncture for pain and symptom control.83 Acupuncture is recommended for pain control in palliative care in the UK.84 Since 2015 the National German breast cancer group the Arbeitsgemeinschaft Gynakologische Onkologie has recommended acupuncture for over 13 symptoms, some of which will show up in palliative care .85-page 769 In Texas the MD Anderson Cancer Center recommended acupuncture for xerostomia in 2007,86 today, at this hospital acupuncture is used as part of integrative medicine for relief of symptoms in palliative care [https://www.mdanderson.org/research/departments-labs-institutes/departments-divisions/palliative-care-and-rehabilitation-medicine.html]. In New York the Memorial Sloan Kettering uses acupuncture in palliative care (https://www.mskcc.org/blog/reassessing-palliative-care-msk-emphasizes-supportive-care-all-people). Acupuncture is recommended in South Africa for muscular problems in palliative care (http://www.inpracticeafrica.com/~/media/Guidelines/SA\_HPCA\_Clin.pdf).

*Specialist palliative care recommendations*

Acupuncture is recommended for palliative care in multiple sclerosis,87 pain control in HIV patients,88-89 COPD,90 patients with dementia,91 end stage renal disease,92 and hiccups in palliative care in Holland (<https://www.pallialine.nl>). The Australian organization Therapeutic Guidelines recommends acupuncture for hiccups and pain control in palliative care.93, 94

*Examples of recommendations in paediatric palliative care*

Acupuncture is recommended in palliative care for pain control,95 and more broadly for chronic and acute pain, cancer pain, dyspnoea and post-operative nausea and vomiting.60 It is recommended for pain control in the Netherlands96 and Ontario, Canada.97 Acupuncture is recommended in hospital based paediatric palliative care in Minnesota, USA (https://www.childrensmn.org/for-health-professionals/refer-patient-childrens/pain-medicine-palliative-care-hospice/) and Ontario, Canada, (https://www.macpeds.com/documents/PediatricPalliativecarecard.pdf). Acupuncture has been found to be safe,42-44 and feasible98, 99 in paediatric patients.

**Discussion**

Twenty years ago there was little evidence for acupuncture in palliative care,100, 101 with systematic reviews around ten years ago showing a general lack of convincing evidence,47, 51 but as the evidence for acupuncture has grown,4, 5 we can see that the evidence base for acupuncture in palliative care has also grown. Researchers agree that acupuncture is safe in the hands of qualified practitioners.50, 53, 60, 63, 64, 68, 75 While much of the evidence of effectiveness is not strong,47-74 added to the safety data this has however been sufficient for experts to recommend acupuncture across a number of symptoms in clinical practice and treatment guidelines. Most authors state that further research is needed to explore the extent and use of acupuncture in palliative care.

Other non clinical-trial evidence exists for the use of acupuncture in palliative care which reveals more about the possible extent of effectiveness of acupuncture. In an observational study of 172 cancer patients, Cracolici and colleagues found significant improvements in pain, fatigue, nausea, sleep disturbance, anxiety, loss of appetite, shortness of breath, well-being and cough.102 In an observational study of 68 patients receiving acupuncture in palliative care Miller and colleagues found significant reduction in pain, anxiety, depression, drowsiness, dyspnoea, fatigue, nausea, and well-being, with association between improved depression and fatigue and pain reduction.103 In a qualitative study of patient experiences receiving acupuncture in a hospice setting, McPhail and colleagues interviewed 20 patients and found generally consistent experiences that acupuncture not only reduced many physical symptoms but that it also improved emotional and psychological health and, for some, enhanced spiritual well-being.104

In conditions like cancer, various symptoms often occur together, leading to the recognition of ‘symptom clusters’.105 Since acupuncture is a technique that has shown evidence across a number of symptoms in cancer care, it is also recommended as a therapy because it can address a number of symptoms in the symptom clusters.106, 107 The practitioner can modify treatment for each patient according to the presenting symptoms or priority of symptoms, with some evidence for each of the symptoms to be addressed. In palliative care patients also often exhibit clusters of symptoms. Few therapeutic options offer a mixed-evidence based approach like this. It may also be advantageous if traditionally based practice108 is used since emerging evidence supports the performance of TEAM diagnostic evaluations and treatments in palliative care. A recent study found that the diagnostic patterns were predictors for response in hot flashes in cancer patients.109 Since patients in palliative care maybe less able to tolerate various medical interventions, and since acupuncture appears to be reasonably well tolerated, it may be a useful tool in palliative care.102

This brief review is limited due to not rigorously assessing the evidence for acupuncture in palliative care by using GRADE or other relevant tools. As described above though, there are however significant problems and challenges interpreting available evidence due to problems with the use of sham acupuncture and interpreting results from sham controlled trials.31-35 It is beyond the scope of this paper to address those problems. Additionally, guideline groups that make statements about whether to use acupuncture or not weigh the evidence against the evidence for other interventions for the same symptom, where the evidence may also be limited. The processes by which these groups weigh evidence and make decisions is not always clear. The current review is also limited due to the difficulties of finding all treatment guideline publications that make statements about whether to use acupuncture or not. We have only examined the data available to us. It is possible that many more publications recommend against acupuncture in palliative care or vice versa. It should be possible to get a better view of this once the registry of clinical practice guideline and treatment guideline publications that make recommendations about acupuncture has been completed.

**Conclusions**

In this brief narrative review, we found mixed evidence concerning the of effectiveness for using acupuncture in palliative care. While we found generally low levels of evidence, acupuncture is viewed as being safe for these patients, making it potentially useful for patients in palliative care. We also found that the use of acupuncture as a treatment within the integrative medicine toolbox in palliative care is documented in both medical specialist and government literature and in some countries appears to be rapidly expanding. This includes the use of acupuncture in paediatric palliative care.

Acupuncture is one of the best researched CAM therapies in integrative health and as the value of integrative health approaches in palliative care develops, we think that acupuncture will be increasingly used. It will be important for palliative care specialists to prepare appropriate educational opportunities to train acupuncturists in the specialised needs of palliative care. More relevant and proper research is needed to support the uses of acupuncture within integrative medical palliative care. Given the difficulties performing placebo control trials of acupuncture and the ongoing debate within the palliative care field about appropriate research methods, it is advisable to perform high quality pragmatic research approaches or when appropriate comparative effectiveness studies in future trials of acupuncture and also to include biomarkers that can explain or give a tentative theoretical framework of potential effects.

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**Data availability**

There is no available data related to this article

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