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Cognitive Effects of Chemotherapy

Introduction

Over the past decade there has been increasing attention to the puzzling phenomenon colloquially known as “chemobrain.” That term has a rather disparaging quality to it, and may actually be misleading or inaccurate. The concept is not well defined. For the patients who experience this frustrating syndrome, however, there is no doubt that it has a major negative impact on quality of life that can extend for years beyond the end of cancer treatment.

What the research shows

Research on cancer-related cognitive dysfunction is in its infancy. Results are somewhat difficult to interpret. The majority of the research has been done in breast cancer patients and survivors, but cognitive dysfunction has been seen in patients with other cancers, as well. The reported prevalence in various studies ranges from 17 to 75%, according to a recent review. The disparity might be explained by different definitions, test instruments, and variable study sizes, designs, and populations. These methodological issues make it difficult to compare studies.

Symptoms reported as cognitive adverse effects are in the domains of working memory, motor speed and reaction time, visual spatial skills, and visual and verbal memory. Specific problems reported by patients include mental slowing, difficulty maintaining focus, decreased ability to multitask, difficulty finding the right word, difficulty organizing routine daily tasks, and increased time to learn new things.

One of the problems with defining this syndrome are the contradictions: only a minority of patients report this problem; the symptoms have also been associated with anxiety, depression, and fatigue; some studies have shown decreases in cognitive function *before* chemotherapy; some studies have shown discrepancies between patient reports of decreased cognitive function and results of neuropsychological testing. In addition, hormone therapy, radiation therapy, biotherapy, and even surgery have been implicated as possible contributors. A new organization, the International Cognition and Cancer Task Force, has been formed to develop priorities and guidelines for the next generation of research.

An intriguing theory about why some patients seem affected and others not, is a genetic predisposition. Research is underway to determine if a gene that is associated with Alzheimer’s is a risk factor.

Interventions

Patients, of course, are looking more for relief than for new research designs. A recent [online survey](#) reflects the distress experienced by people with this condition. A major frustration was the perception that their health care providers regarded it as a minor problem or were sympathetic but unhelpful.

Since we don’t know exactly what it is or what causes it, there are no recognized guidelines or treatments for cancer-related cognitive dysfunction. Some symptoms share similarities with attention deficit hyperactivity disorder (ADHD). A clinical trial is currently underway

testing dexamethylphenidate, a psychostimulant similar to those used to treat ADHD. A MayoClinic.com [article](#) suggests several self-care interventions that may help with coping and compensating, including physical and mental exercises, establishing & sticking to routines, and talking openly about the experience. A support group in Rhode Island developed and acted in the play, [Chemo Brain!](#) Other suggested interventions include acupuncture, cognitive-behavioral therapy and brain-training programs, but no treatments have yet been recognized to have general application.

News

- [Hospitals Embrace Palliative Care](#). News article from *Journal of the American Medical Association* 19 Sep 2007;298(11):1263-1265.
- The World Health Organization (WHO) has released a new report, [Palliative Care](#), the 5th module in its Cancer Control Series.
- [Access to Pain Relief - An Essential Human Right](#). Report published to coincide with World Hospice and Palliative Care Day, Oct 5, 2007. Details the lack of access to medication and expertise in much of the world, especially the poorest countries and most vulnerable people.
- New journal launched: *Current Opinion in Supportive and Palliative Care*. The entire [first issue](#) is available on line free of charge.

Journal Watch

- Lautrette A, et al. A communication strategy and brochure for relatives of patients dying in the ICU. *New England Journal of Medicine*. 2007 Feb 1;356(5):469-78.
 - Accompanying editorial: Lilly CM, Daly BJ. The Healing Power of Listening in the ICU. *New England Journal of Medicine*. 2007 Feb 1;356(5):513-515.
 - Commentary: Chu J. Communication at end of life for family members. *American Journal of Nursing*. Nov 2007;107(11):72DD-72FF.
- Schwartz AL. [Understanding and treating cancer-related fatigue](#). *Oncology Nurse Edition* Oct 2007;21(11):30-34. (Free full text; registration required)
 - [Review and commentary on Schwartz article](#) by Ann M. Berger, PhD, RN, FAAN
- Book reviews in *New England Journal of Medicine* Oct 10, 2007;298(14):1700-1701:
 - *Cancer Survivorship: Today and Tomorrow*
 - *Handbook of Cancer Survivorship*.

Resources on the Web

- [Clinical practice guidelines for communicating prognosis and end-of-life issues with adults in the advanced stages of a life-limiting illness, and their caregivers](#). *Medical Journal of Australia*. 2007;186(12 Suppl):S77-S108
- [Cancer Care for the Whole Patient: Meeting Psychosocial Health Needs](#). New report from the Institute of Medicine. Ruth McCorkle of the Yale School of Nursing is among the authors.
- New blog by inner city hospice volunteer, [Hospice and Nursing Homes Blog](#).
- A major patient safety issue is the widespread problem of lack of adherence to prescription medication instructions. A new report illuminates the problem and makes recommendations. [Enhancing Prescription Medicine Adherence: A National Action Plan](#).

Palliative Care Calendar & CE

Yale

- Dec 11. Demanding Excellence in Pain & Symptom Management: Challenges for 2008 & Beyond. Keynote Speaker: Janet Abraham, MD, of Dana-Farber/Brigham & Women's Hospital. Anlyan Center. Co-sponsored by Yale Cancer Center, The Connecticut Hospice, American Cancer Society, Connecticut Pain Initiative.

Connecticut

- Nov 8, 5:30 – 8:00pm. Everything you wanted to know about funerals but were afraid to ask. Education & networking event for [Connecticut Coalition to Improve End-of-Life Care](#). Registration & directions: [Lynn McPhelimy](#) 860-759-4174.
- The Connecticut Coalition of End-of-Life Nurse Educators has scheduled four offerings for 2007 based on the End-of-Life Nursing Education Consortium (ELNEC) curriculum. Open to all clinicians; CNE's available. Contact: Pat Trotta, (203)379-4763; patricia.trotta@cancer.org. One 2007 offering remains:
 - Nov 10. **Cultural and Ethical Issues at End of Life**. UConn Medical Center, Farmington.

Elsewhere

- [Program in Palliative Care Education and Practice](#)—the premier multidisciplinary palliative care education program for educators & leaders. Apr 29 - May 6 & Nov 11-18, 2008 (must attend both sessions). Application deadline: 15 Jan 08

Online

- [Perspectives in Oncology Supportive Care](#). Webcast of an Aug 2007 nursing conference offering 12 CNE contact hours. M. Tish Knopf of Yale School of Nursing is one of the faculty.