

Professor David Ball: prophylactic cranial irradiation (PCI) benefits patients with SCLC

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Expert introduction

Professor David Ball (*Figure 1*) is the Director of the multi-disciplinary Lung Service at Peter MacCallum Cancer Centre. He has published over 200 book chapters and papers in the peer reviewed literature. He is one of three editors of the textbook “The IASLC Multidisciplinary Approach to Thoracic Oncology”, 2nd edition 2017. Professor Ball is Editor-in-Chief of the Journal of Medical Imaging and Radiation Oncology and is on the editorial boards of Nature Clinical Practice Oncology and Clinical Lung Cancer. He is currently Chair of the Australian Lung Cancer Guidelines Working Party and a member of the Mesothelioma Guidelines Working Group. Professor Ball recently stepped down as Chair of Cancer Australia’s Lung Cancer Advisory Group. He has been a member of the International Association for the Study of Lung Cancer TNM staging committee, which updated the staging of lung cancer for the 8th edition. He is a Professorial Fellow of the University of Melbourne.

Professor Ball’s research interests include lung cancer staging, tumour imaging and definition, image guided radiotherapy, determinants of radiation response and combined modality therapy.

Professor David Ball gave a presentation related to “General principles of prophylactic cranial irradiation (PCI) in the treatment of small cell lung cancer”. We are honored to invite him to visit our booth (*Figure 2*) and have an interview with him to learn more about his views on PCI in the treatment of SCLC.

Editor’s note

The 18th World Conference of Lung Cancer (WCLC), hosted by International Association for the Study of Lung Cancer (IASLC), was held from October 15th–18th in Yokohama, Japan. We were honored to have an interview with Professor David Ball.



Figure 1 Professor David Ball.

Interview (*Figure 3*)

Professor Ball said that since 1999, it has been established that prophylactic cranial irradiation (PCI) not only reduces the chances of brain relapse, but also improves survival and cure rates in patients with limited small cell lung cancer who have had a good response to chemotherapy. Not only is the survival benefit important, but maintaining quality of life by avoiding the physical and neurocognitive complications of brain metastases is critical if the individual’s independence is to be maintained. One of the greatest fears of cancer patients is dementia, and becoming dependent on others. A recent Japanese study suggested that a policy of observation and regular surveillance with brain MRI may be an equally effective strategy to PCI in patients with extensive disease in terms of survival, without exposing every patient to the risks of radiation-induced neurocognitive dysfunction (2). This has led to proposals for a trial of PCI versus active surveillance with MRI in patients with limited stage SCLC (3). But what form should the PCI take? Should it be hippocampal sparing with memantine, even though we do not yet know if this strategy is effective in reducing brain metastases while



Figure 2 Professor David Ball (second from right) visited AME booth and took picture with other experts on WCLC held in Yokohama, Japan in October, 2017.



Figure 3 Professor David Ball: prophylactic cranial irradiation (PCI) benefits patients with SCLC (1). Available online: <http://asvidett.amegroups.com/article/view/22853>

preserving neurocognitive function? And what of the potential benefits of immunotherapy and its impact on the rate of brain metastasis development should it become a mainstream treatment for small cell histology? Can the dose be reduced (with less risk of neurotoxicity) by giving the PCI earlier (4) ?

Given that the purpose of PCI in patients with limited disease is not only to improve survival but to achieve a higher rate of cure (which is rare with extensive stage disease), I would caution against too hastily de-escalating treatment because of concerns about possible neurotoxicity. And does anyone seriously think that patients who relapse in the brain, even though it is detected early with MRI and treatment is with stereotactic radiosurgery, are still curable?

In 1995, I co-authored a review entitled “*Prophylactic cranial irradiation: more questions than answers*” (5). The title seems just as apposite 20 years later.

As one of the editors of the second edition of the IASLC

Thoracic Oncology textbook, Professor Ball spoke about the book. The new edition of IASLC Thoracic Oncology updates large sections of the first edition of the textbook, which was released in 2014. Since the first edition, the science surrounding the diagnosis and treatment of lung cancer and other thoracic malignancies has exploded, with significant changes occurring in genomic phenotyping, staging, histologic classification and immunotherapeutic treatment strategies. As a result, new or updated material represents over 50% of the second edition of the textbook, an appropriate percentage considering the wealth of new data that has recently come to light.

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None.

Footnote

Conflicts of Interest: The author has no conflicts of interest to declare.

References

1. Liu M. Professor David Ball: prophylactic cranial irradiation (PCI) benefits patients with SCLC. *Asvidett* 2018;5:079. Available online: <http://asvidett.amegroups.com/article/view/22853>
2. Takahashi T, Yamanaka T, Seto T, et al. Prophylactic cranial irradiation versus observation in patients with extensive-disease small-cell lung cancer: a multicentre, randomised, open-label, phase 3 trial. *Lancet Oncol* 2017;18:663-71.
3. Rusthoven CG, Kavanagh BD. Prophylactic Cranial Irradiation (PCI) versus Active MRI Surveillance for Small Cell Lung Cancer: The Case for Equipoise. *J Thorac Oncol* 2017;12:1746-54.
4. Suwinski R, Lee SP, Withers HR. Dose-response relationship for prophylactic cranial irradiation in small cell lung cancer. *Int J Radiat Oncol Biol Phys* 1998;40:797-806.
5. Ball DL, Matthews JP. Prophylactic Cranial Irradiation: More Questions Than Answers. *Semin Radiat Oncol* 1995;5:61-8.

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