

# MEDICAL AND PSYCHOSOCIAL CHALLENGES IN CARING FOR ADOLESCENT AND YOUNG ADULT PATIENTS WITH CANCER

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## Abstract

Over the last five years there have been tremendous changes in the care of adolescent and young adult cancer patients in Australia, generally accepted as 15-25 years old. There has been recognition that the needs of adolescent and young adults with cancer are different from both adults and younger children, and warrant specialised services. A cancer diagnosis during this period of transition has the potential to significantly impact upon many areas of normal development including physical, psychological, social, sexual, educational and financial domains. Relatively little is known about the basic biology, genetic, epidemiologic, therapeutic and economic factors that affect incidence, disease outcomes and cancer related quality of life in this population. This paper explores the medical and psychosocial needs for these patients and summarises the recent progress of the Youth Cancer program in Australia, which has led to the development of this new subspecialty and the creation of youth cancer services.

Young people aged 15-29 years make up 1.7% of all new cancer diagnoses in Australia. This comes from a recent report by the Australian Institute of Health and Welfare, which forms the first comprehensive picture of cancer in adolescent and young adult (AYA) Australians.<sup>1</sup> Five-year relative survival in this population overall is 88%, however greater improvements in survival have been seen in younger children and older adults over the same time period. Importantly, AYA patients living in areas of lowest socioeconomic status have lower rates of five-year survival compared to those living in areas of high socioeconomic status (85% v 90%). AYA patients living outside major cities are 1.3 times more likely to die from cancer compared to those in cities. The biggest concern in the AYA age group however, is the lack of improvement seen in survival figures and the 'survival gap' seen between children and AYAs with particular tumour groups such as sarcoma and acute lymphoblastic leukaemia (ALL).<sup>2-5</sup>

A number of reasons have been proposed for this lower survival rate, many of which may have overlapping influences. Delays in diagnosis may contribute towards tumour progression and metastatic spread and therefore worsening prognosis, increasing the need for more intensive treatment and adding to emotional stress.<sup>6-10</sup> Causes for delayed diagnosis are multifactorial. Many studies have shown longer duration of symptoms before diagnosis,<sup>9-12</sup> which can be 'patient related' due to AYA patients ignoring or minimising symptoms, or due to medical providers having a low suspicion of cancer in this age group and attributing symptoms to other causes such as growing pain, sports injuries or school refusal.

Half of all AYA patients visit a primary care physician three or more times before referral.<sup>7,13</sup>

Once diagnosed with cancer, the referral pathway for an AYA patient can vary substantially depending on the type of cancer and age at diagnosis. The spread of AYA cancer patients across paediatric and adult facilities can result in the inconsistent application of clinical protocols and limits the enrolment of AYA patients into clinical trials. There is also evidence in some tumours that biological and pharmacological differences exist in AYA patients.<sup>4,14,15</sup>

The most common cancers affecting AYA patients in Australia are melanoma, lymphoma, germ cell tumours, leukaemia, brain tumours, sarcomas and thyroid cancers.<sup>1,16</sup> AYA patients may also have cancers that are more common in early childhood or those seen in adulthood. This variety of cancer diagnoses represents a unique challenge for clinicians and requires collaboration between paediatric and adult oncologists so that patients can benefit from both tumour specific and age appropriate expertise.

## Adherence

Adolescents are consistently less adherent to treatment recommendations than younger or older cancer patients, even when treated on similar protocols for similar diseases.<sup>17-22</sup> Published rates of non-adherence in cancer cohorts that include AYA patients are up to 60%, which may be a contributor to treatment failure. Lack of appropriate psychosocial and parental support during and after treatment is correlated with non-adherence.<sup>17-22</sup> Other factors associated with non-adherence to treatment are the

side-effect profile and likelihood of success with treatment, avoidant coping strategies of AYA patients, undiagnosed mental health problems and the need to attend 'rite of passage' events such as school formals.<sup>17-22</sup> Age-appropriate cancer information, psychological counselling, being responsible for one's own healthcare and decision making, and scheduling treatments to fit into AYA lifestyles may help towards increased understanding and adherence to treatment.

## Changes in treatment and psychosocial care

Over the last 10 years there have been a number of international ALL clinical trials that have shown AYA patients treated on paediatric rather than adult ALL protocols have improved event free and overall survival.<sup>23-28</sup> In Australia, the first AYA ALL trial (ALL6) has started, which uses an accepted paediatric protocol that intensifies treatment based on disease response, cytogenetic and molecular markers.<sup>29</sup> In contrast, using the same treatment across paediatric and adult patients has not been as successful for other tumours. For example, AYA patients with Ewing sarcoma and osteosarcoma treated on the same large international clinical trials, still have a significant difference in survival compared to children. There have been concerns that AYA patients will not be able to tolerate intensive chemotherapy programs due to toxicity, however toxicity data for both ALL and sarcoma studies have shown that adverse events remain within normal expected range, although there are some side-effects which increase with age.<sup>27,28</sup> Further research on pharmacokinetics in this age group is underway. Supportive care requirements and side-effect monitoring are essential.

AYA patients are particularly vulnerable to distress (a spectrum of clinical conditions from sadness and fear to depression and anxiety),<sup>30-32</sup> and this may interfere or change the way in which AYA patients cope with treatment and side-effects.<sup>33</sup> In 2009, an AYA specific psychosocial screening tool, care plan proforma and psychosocial assessment measure was developed by CanTeen Australia to guide psychological assessment.<sup>34-35</sup> This tool has been implemented successfully in youth cancer services throughout Australia since May 2011, with the aim of ensuring all AYA patients have a comprehensive assessment performed at diagnosis and a support plan implemented that takes into consideration their individual needs as early as possible. Patients who are less distressed are likely to be more adherent to treatment and therefore have better outcomes.<sup>36</sup> An international study is planned to validate this tool. Individual factors that promote resilience against psychological distress need to be further examined, as these may also improve outcomes.<sup>37</sup>

## Development of services in Australia

In 2005, an Australian Senate reference committee made two important recommendations that started the development of AYA services in Australia. It was recommended that Cancer Australia consider the development of appropriate AYA referral pathways to take into account particular difficulties confronted by this population, and examine the feasibility of establishing

specialised AYA cancer care units in public hospitals.<sup>38</sup> In 2007, CanTeen and Cancer Australia formed a reference group that led to the Australian Government recognising the need for specialist care for AYA patients with cancer, with the publication of the National Service Delivery Framework.<sup>39</sup> This framework made five key recommendations for development of services:

- lead adolescent and young adult cancer care sites
- access to support services and clinical trials
- comprehensive assessment at diagnosis
- coordinated care to empower adolescent and young adult decision making
- expert multidisciplinary teams skilled in adolescent and young adult cancer care.

In 2010, the Australian Government provided CanTeen with finances to establish and manage the Youth Cancer Networks Program and specialist youth cancer services have now been developed across each mainland state in Australia to provide medical, nursing and allied health care with AYA expertise.<sup>35</sup> Although AYA services in Australia have lagged behind the UK and North America, which have successfully introduced teenage cancer centres,<sup>40-41</sup> the Australian model of care has had to accommodate a number of differences.<sup>42</sup> The geographical spread of AYA patients across Australia means the treatment of these relatively small patient numbers occurs across many locations, in both public and private sectors, and via well-established cancer referral pathways within tumour specific multidisciplinary teams. There is no health legislation, as there is in the UK, about the place of treatment for AYA patients. This has meant referral to youth cancer services has been slow in some areas and further collaboration will be required to increase uptake of AYA services.

With AYA emerging as a subspecialty field in Australia,<sup>43</sup> initiatives have been created to support training and provide educational resources. Postgraduate career development is now available through the University of Melbourne, with an oncology specific certificate in Adolescent Health and Welfare created in 2011. Plans for AYA specific topics to be integrated into physician, nursing and allied health training are also underway. A number of AYA career development fellowships were established in 2011, which have allowed both paediatric and adult clinicians with an interest in AYA oncology to gain further medical training. These clinicians will be providing the expertise for youth cancer services in the future and implementing effective programs and practices over the coming years. The Clinical Oncological Society of Australia (COSA) in partnership with CanTeen, have produced guidelines covering fertility preservation, psychosocial assessment and early diagnosis of cancer by general practitioners.<sup>44-46</sup> COSA has also developed an active national network of clinicians, which has facilitated the sharing knowledge and fostered national research initiatives.

## Research

Implementation research is being undertaken to ensure there is an evidence base to support ongoing funding of youth cancer services and direct referral patterns. National and international collaborative research and clinical trials are underway, with key trials mapping experiences and patterns of care and fertility preservation, as well as medical trials in leukaemia and sarcoma. Despite strong evidence that clinical trials improve cancer survival rates, participation in clinical trials in AYA patients over 15 years of age is still lower than in children,<sup>47-50</sup> even when clinical trials have appropriate age eligibility criteria.<sup>48</sup> Access to clinical trials will continue to be an issue while there are small numbers of AYA patients treated in a large number of cancer centres across Australia. It is essential that data is collected on medical and psychosocial outcomes for AYA patients, and as such Cancer Australia has developed a national minimum dataset. This has been trialled in a number of youth cancer services in 2012, with outcomes to aid future development of services.

Issues around survivorship and ongoing care are becoming recognised as essential to good cancer management. This is particularly so in the AYA population, who are negotiating all of the usual hurdles associated with transition to adulthood such as completing education, establishing careers and relationships and developing independence. This must be done with the additional burden of possible treatment related effects, both physical and psychosocial, and the potential for long-term or unknown future effects. The high incidence of chronic conditions is well documented in survivors of childhood malignancy,<sup>51-52</sup> while well established in the paediatric setting, long-term follow-up beyond five years in adult hospitals is not. The developing field of survivorship care has been covered in detail in *Cancer Forum*,<sup>53</sup> with the need for coordinated care, in particular supportive care, for all patients made clear. Many models exist for delivering this care,<sup>54</sup> although evidence supporting efficacy is sparse. Collaborative research efforts assessing quality of survival in AYA patients and how best to achieve this are required to inform current practice frameworks.

## Conclusion

Care for AYA patients in Australia has made a promising leap over a very short period, with adult and paediatric colleagues developing youth cancer services and a strong, dedicated network that has allowed for mentorship, education and career development. Sites in Australia are actively contributing to AYA research and looking at solutions to allow AYA access to clinical trials. Further international research collaborations are essential to improve medical knowledge about AYA cancer treatment and psychosocial care, and share examples of good clinical practice. Work is being done to provide equity in service provision across Australia, with the ultimate aim of improving medical outcomes as well as reducing psychosocial distress during and after treatment.

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