Palliative care in Adolescent and Young adults

Dr AK Anderson
Consultant in Paediatric Palliative Medicine
Royal Marsden Hospital and Shooting star chase hospice
Meanings and definitions

✧ From the onset of physiologically normal puberty, and ends when an adult identity and behaviour are accepted.

✧ Ages of 10-19 years (WHO)

✧ Allow flexibility in the age span to encompass special situations such as the emancipated minor or the young person with delayed development or prolonged dependency.
Delivering care
Deaths in UK/year: 0-24yrs old
Place of death in AYA with cancer

Rajeshuni, 2017

- 30,573 Californian AYA oncology:
  - 57% died in a hospital
  - 33% died at home
  - 10% died in other locations (eg, hospice facility or nursing facility).

- In the early 90s:
  - hospital death rates decreased from 68.3% to 53.6%
  - at-home death rates increased from 16.8% to 35.5%

- In late 90s,’00s and ‘10s stabilised.

More likely to die in hospital if:
- Younger
- minority race,
- living, ≤10 miles from a specialty center
- a diagnosis of leukemia or lymphoma
The decision should be based on **overall benefit** to the AYA in meeting their needs.

- Identify the lead service
- Clear communication and handover
- Ensuring advance care plans are in place throughout the process, (Grinyer, 2011).
Gaps in services

Kaal, 2016

Palliative care of AYAs (18-35 years) in community with GP support:

1. **Symptom control**
2. Communication between hospital professionals and parents
3. Aftercare
4. Transition between hospital and GP
Communication with AYA
Ongoing treatment at end of life

- AYAs (51.9% cf 24.3% adults) pursued further oncological therapies

- AYAs (40.7% cf 5.4% adults) received chemotherapy during the last month of life.

- Despite most stating a preference to be at home if they were dying (Jacobs, 2015) most AYA actually die in hospital (Mack, 2015).

- AYAs still receive chemotherapy (11%) within 14 days of death with 22% admitted to intensive care in the last month of life.

- AYAs (68%) receive at least 1 medically intensive end of life care measure (Mack, 2015).
Advance care planning

- The majority experience fears and worries about dying, but 1/3 have not talked to anybody about those thoughts (Helge-Hazelton, 2016)

AYAs say:
- The introduction of ACP should not be when they are first ill or hospitalized but early on in diagnosis or when dying (Lyon, 2014; Jacobs, 2015).
- Only 12% were not comfortable discussing death (Jacobs, 2015).

Examples of tailored ACPs (Zadeh, 2013)
Voicing My CHOICES
Talking about death and dying

- Maybe lack of consensus between AYA and their parents on the importance of dying a natural death, dying at home and ‘wanting to know if I were dying’.

Adolescents want:
- to be fully informed about their disease
- But wanted information relayed as positively as possible so that they could stay hopeful. (Jalmsell, 2016)

- In most cases, clinicians should gently but persistently engage adolescents directly in conversations about their disease prognosis and corresponding hopes, worries, and goals (Rosenberg, 2016)
AYA and symptom management

Robust studies are lacking with approaches extrapolated from adult and some paediatric research, clinical experience and historical practice.
Symptom management approach

The Symptom assessment

▪ A holistic assessment and management plan should occur separately but contemporaneously to the treatment and management of the AYA’s disease.

▪ Aspects:
  ▪ Biological
  ▪ Psychological
  ▪ Social

Specific issues to consider

▪ Mood
▪ Sleep
▪ Anxiety
▪ Cognitive understanding
▪ Perceptions
▪ Attribution of meaning of individual symptoms
▪ Social functioning (friendships and love relationships)
▪ Education- attendance and ambitions
▪ Parental behaviour:
  ▪ minimizers or catastrophisers
  ▪ Relationship with AYA
Symptoms in AYA (Oncology)

AYA oncology patients aged 15-25 years old at referral to palliative care compared with matched/unmatched pair (gender and age)

- Pain (91%) trend toward neuropathic pain
- Diminished well-being (76%)
- Fatigue (75%)
- Decreased appetite (67%)

“AYA cancer patients appear to experience a unique symptom profile with high symptom prevalence and complexity”. 

Hughes, 2015
Prescribing in AYA

In the under 18 years of age prescribed medications are either:
- on a weight-based measurement (to a maximum start dose)
Or
- in weight or age groups

A cautious approach for a small AYA should be taken where weights of less than 50kg may require a weight-based dosing schedule to reduce the side effect profile.

The dichotomy of dosing:
1. Some patients have a marked sensitivity to the side effects of medication at start doses
2. Others require significantly higher doses to gain symptom control

Some AYAs consciously choose to have less medication than prescribed due to the side effect profile and prefer to tolerate their symptoms.
Compliance

AYAs:
- 63% do not adhere to their treatment regimens (Kondryn, 2011)
- More frequently non-adherent than adults in chronic conditions (Kamperidis, 2012)
- Motivation, persistence, collaboration, mindfulness, cognitive capacity, flexibility and active participation are good indicators of adherence.

Perceived value of adherence and identifying the consequences, may lead to improved adherence (Landier, 2011).

“I take the drugs (prophylactic anticonvulsants), most of the time when I remember... when my left arm starts to shake. I definitely take it then.”
(patient, 19 years)
Social media

- Their usage can often inform professionals about the AYA’s current psychological and physical wellbeing.

- Social media enables AYAs
  - to keep in touch with and update friends and family
  - offering help to others
  - find meaning for themselves

**vblogging** (and other formats) are widely used to share their experiences. Themes include ‘normalizing the news, facing treatment failure, and reconciling ‘chronos’-the finite concept of time’ (Keim-Malpass, 2016)

The balance between sharing and over exposure is a constant issue. As the AYA becomes more unwell they may start to cut themselves off and reduce the forums and platforms they use.
Pain
WHO persisting pain ladder

Step 1

Non-opioid +/-adjuvants

Step 2

Weak opioid
+non-opioid
+/-adjuvants

Step 3

Strong opioid
+non-opioid
+/-adjuvants
Opiate choice

- Morphine is recommended as first-line opiate for persisting pain (WHO, 2012) for under 18 years of age.

- There is a marked dichotomy of response by AYA to opiates.

- For some AYA: very sensitive to very small doses and other requiring rapid titration to high doses to control pain.

A common-sense approach is start low and reassess frequently.

- AYA describe a sense of ‘spaced out’ or ‘removed’ from the situation’ sensation as being very intrusive; this often leads to discontinuation of the opiates early on.
Fentanyl

Fentanyl buccal and lozenge
- Use in under 18 yrs (Coombes, 2017)

Fentanyl transdermal preparation:
- Improve compliance?
- The 72-hour matrix formulation changing every 48 hours
- Sedation increases initially, itching (25%) and erythema (15%) occurs but with no other significant side effects reported (Othman, 2016).
Opiates- types and roles

- Oxycodone
- Bupronorphine
- Hydromorphine
- Diamorphine

Community based Patient controlled analgesia (PCA). (Anghelescu, 2015)

Useful in:
- severe, rapid onset pain
- patients with enteral absorption issues
Opiate induced constipation

- **Approach:**
  - diet advice, fluid intake and exercise.
  - education and shared agreement on a palatable laxative may improve compliance.
  - Osmotic laxatives are often first line with stimulants added if there is no clinical response.

- Peripheral acting opioid antagonist preparations
  - Methylnaltrexone (subcutaneously or intravenously)
  - PEGylated naloxol as an oral preparation taken daily.
  - Some MR opiate preparations have naloxone incorporated into the formulation.
Ketamine

- Oral bioavailability is low but it can be given buccally.
- No randomized, controlled trials on the use of Ketamine in the under 18 yrs.
- A few studies report safety data (Bredlau, 2013).
- Option for refractory cancer pain in both adults and children. (Breadleau, 2013)
- Used frequently as an adjuvant in pain management.

Methadone

Indication:
- for severe intractable pain,
- complex neuropathic pain (Rasmussen, 2015).
- an opiate switch due to intolerable undesirable effects.

At a clinically effective analgesic dose, methadone dosage and duration were not correlated with QTc prolongation, even in the presence of other risk factors, suggesting that methadone use may be safe in the under 18 year age group (Anghelescu, 2016).
Drug misuse and abuse

- Availability, exposure, experimentation and use of recreational drugs are prevalent.

General advice:
- Awareness and acknowledgement of the presence of recreational drugs
- AYAs may have personal experience and perceptions - good and bad
- Social drug taking should be part of history taking - discuss in unjudgemental manner
- Ideally away from parents

Part of management plan and information provision:
- Educate on the difference between prescribed medication and similar street drugs
- The interaction of alcohol with prescribed medication and recreational drugs

Prescribed medication is also potentially open for abuse
- IV Cyclizine when given as a fast intravenous push gives a ‘rush to the head’
- Oxycodone tablets can be crushed and snorted
- Fentanyl patches can be smoked or give a rapid increase in dose in a very hot bath.
Neuropathic agents

- **Gabapentin** is used in adolescents (Butkovic, 2006)
- **Pregabalin** as a viable alternative (Vondracek, 2009)

- Both are well tolerated with a low incidence of adverse effects—except fatigue

- Low dose **Amytriptyline** may improve sleep and appetite, preceding an analgesic effect but its side effect profile may limit its use.

- For other antidepressants, seek psychiatric advice, due to the increased risk of suicide in the adolescent population taking certain antidepressants.
Sleep

- An integral part of pain management (and other symptoms)

- Adolescents should have their sleep assessed (Valrie, 2013)
  - clinical review
  - sleep diary or standardized sleep measures
  - treated

In AYA with cancer, sleep disorders have been associated with

- Pain
- Medication
- Hospitalisation
- Fatigue
  - Prevalence of severe fatigue in AYAs with cancer (48%) comparison with matched population-based controls (20%). Poort, 2017
Somnolence and sedation

- Opiate induced sedation is a common.

- Daytime somnolence or sedation often settles once a stable opiate dose is reached.

- Dose changing or switching to an alternative opiate or adding an adjuvant may limit the opiate dose, hence limiting the sedation effects.

- Methylphenidate (psychostimulant) may be useful for daytime somnolence
  - Take a dose prior to a planned event, providing a period of increased wakefulness for 4 hours.
The prevalence of LLC in children in England double the previously reported estimates (Fraser, 2010).
Figure 2 Prevalence of Life Limiting Conditions in Children by major diagnostic group, England 2000-2010

Prevalence per 10,000 population (0-19 years)

- Neurological
- Oncology
- Haematological
- Metabolic
- Congenital
- Respiratory
- Circulatory
- Genitourinary
- Gastrointestinal
- Perinatal
- Other

Year: 2000/01 to 2009/10
Issues of life limiting conditions in transition

De Plessis, 2017

Congenital heart disease as example:

- Severe CHD spectrum – with a single ventricle and undergo the Fontan surgical procedure (multistep palliative procedure).

- Interviewed AYA prior to transition:
  - Poor knowledge about their Fontan circulation
  - 41% had a poor understanding of the purpose of their medications/treatments.
  - Over 50% had poor knowledge around medical help-seeking (when, who, how).
  - Most reported feeling comfortable with discussing their medical issues with their cardiologist, but considerably less so about sensitive adolescent issues, in particular, emotional wellbeing.
  - Parents reported high levels of anxiety around transition to adult care services.
Symptoms in non-oncological life limiting conditions

- 275 children with progressive, non-curable genetic, metabolic, or neurological conditions

- The commonest symptoms:
  - pain, sleep problems, and feeding difficulties

- On average 3.2 symptoms of concern.
- Under-reporting by clinicians compared with parents.
- Regardless of use of associated medications: pain, feeding and constipation were often frequent and distressing.
- Presence of G/J tube associated with a higher total number of symptoms
  - respiratory problems, pain, feeding difficulties and constipation
- Extensive mobility modifications are associated with higher numbers of symptoms.

Steele, 2014
Advance Care Planning in non-cancer population

- Complexities medical conditions
- Technology dependencies

- ACP- include
  - Unexpected and sudden, in the context of an otherwise active management plan
  - Expected and necessitate discussions about the process of dying and attention to symptoms.
  - Decision-making about appropriate levels of intervention must take place within a legal and ethical framework,
  - Recognising that the UK Equality Act (2010) protects the rights of disabled children and young people to the same high quality healthcare as anyone else.
Ethics and medical intervention

Case 1

- Fully ventilated
- Trachy
- Severe neurodisability
- Mum now wants to stop ventilation

Case 2

- Full ventilated (no trachy)
- Progressive condition
- Wanting all medical intervention available including experimental treatment
In summary

AYAO patients (15-26yrs) who died in the hospital:
- required considerable medical and psychosocial care
- experienced numerous symptoms during the LMOL.

AYAO patients followed by the PC team were:
- less likely to die in the intensive care unit (ICU) (38% vs. 68%, $p = 0.024$)
- less likely to have been on a ventilator (34% vs. 63%, $p = 0.028$) during the LMOL.
- Received fewer invasive medical procedures during the LMOL (median, 1 vs. 3 procedures, $p = 0.009$)
- Had a do not resuscitate order in place for a longer time before death (median, 6 vs. two days, $p = 0.008$).

Involvement of the PC team was associated with the receipt of less intensive treatments and fewer deaths in the ICU.

Snaman, 2017
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