CORRESPONDENCE

Anxiety, Depression and Distress Among Children Undergoing Haematopoietic Stem Cell Transplantation and Its Correlation with Age and Socio-economic Status: A Single Centre Experience from India

Jeevitha Sampath¹ · Ramya Uppuluri¹ · Revathi Raj¹

Received: 26 June 2017 / Accepted: 20 September 2017 / Published online: 3 October 2017
© Indian Society of Haematology & Transfusion Medicine 2017

Dear Sir,

Hospital admission for haematopoietic stem cell transplantation (HSCT) is known to be stressful and distressing for children. An objective evaluation of the above and assessment of the variables influencing the extent of depression and anxiety among these children will help channelize resources towards specific demands and needs of these children. We performed a study to evaluate the extent of anxiety, depression and distress among children undergoing HSCT during the inpatient period in our unit and sought to find out the correlation between their extent and age and socio-economic status.

We performed a prospective study at the Paediatric Blood and Marrow transplant unit. Children between the ages of 5 and 18 years undergoing HSCT from 2014 to 2016 were included in the study. The Hospital Anxiety and Depression Scale (HADS) [1, 2] and the NCCN distress thermometer [3, 4] were used to collect data from paediatric inpatients, including questionnaires which facilitate objective measurement of anxiety, depression and distress among patients. HADS consists of fourteen items, seven each for anxiety and depression with scores leading up to grade A (0–7) considered normal, grade B (8–10) borderline abnormal and grade C (11–21) considered abnormal. In the NCCN distress thermometer, a score of 0 was least and 10 was maximum distress respectively. Both the scales were applied only to children who were co-operative and who were able to communicate. The Kuppaswamy

socioeconomic scale was used for determining the socioeconomic status. Written informed consent was obtained from parents of all children. We analysed the incidence of anxiety, depression and distress with regard to age and socio-economic status. All correlation between continuous variables was analysed by Pearson correlation coefficient and p value of < 0.05 was taken to be significant.

A total of 30 children were interviewed ($n = 30$) of which 15 were girls and 15 were boys. The age range was from 5 to 18 years (Table 1). There was no significant difference found in the extent of anxiety or depression between girls and boys. However, distress was found to be higher in boys than girls. A statistically significant positive association was found between increasing age and anxiety ($p = 0.006$). Anxiety and depression showed a statistically significant positive correlation with increasing age ($p = 0.022$). As the grade of anxiety and depression increased, distress was also found to increase and this was statistically significant (anxiety and distress: $p \leq 0.0001$; depression and distress: $p = 0.001$). On comparing anxiety, depression and distress with the socioeconomic status, there was no statistically significant difference found between the various groups. However, there was a tendency towards increased anxiety among more literate children from the higher socioeconomic groups.

We plan to implement this knowledge to focus on specific counselling and anxiety-distress prevention strategies particularly among the adolescent age groups. This would include a multidisciplinary team of trained nurse practitioners, psychologists, counsellors, doctors and parents. We hope that this data will help provide better quality of inpatient care in terms of behaviour management which is imperative for compliance with medications and successful treatment outcome in our country.

✉ Ramya Uppuluri
ramya.december@gmail.com

¹ Blood and Marrow Transplantation Unit, Apollo Cancer Institutes, Padma Complex 320, Anna Salai, Teynampet, Chennai 600035, India

Table 1 Hospital anxiety and depression scale (hads)

S. no	Age (years)	Diagnosis	I feel tense or wound up	Anxiety	I still enjoy the things i used to enjoy	Depression	I get a sort of feeling as if something awful is about to happen	Anxiety	I can laugh and see the funny side of things	Depression	Worrying thoughts go through my mind:	Anxiety	I feel cheerful	Depression	I can sit at ease and feel relaxed	Anxiety	I feel as if i am slowed down	Depression	I get a sort of frightened feeling like butterflies in the stomach	Anxiety	I have lost interest in my appearance	Depression
1	5	Thalassemia major	1	0	0	1	1	1	1	1	0	0	1	1	2	1	1	1	1	1	0	0
2	8	Thalassemia major	1	0	0	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0
3	15	Aplastic anemia	1	0	0	1	1	0	0	0	1	1	0	0	1	1	1	1	1	1	0	0
4	7	Thalassemia major	1	0	0	2	2	0	0	0	1	1	0	0	1	1	1	1	1	1	0	0
5	10	ALCL	2	1	3	3	2	2	2	2	2	2	3	3	2	2	2	2	3	3	2	2
6	5	Thalassemia major	1	1	1	3	3	1	1	1	1	1	2	1	1	1	1	1	1	1	0	0
7	13	Fanconic anemia	1	2	2	2	2	1	1	1	1	1	2	2	1	1	1	1	1	1	0	0
8	5	Thalassemia major	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1	0	0
9	10	Aplastic anemia	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
10	12	All	1	0	0	2	2	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0
11	8	Thalassemia major	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0
12	14	Fanconic anemia	1	2	2	2	2	1	1	1	2	2	1	1	1	1	1	1	1	1	1	1
13	7	Thalassemia major	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
14	9	AML	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1	1	1	1	0	0
15	14	All	2	1	3	3	2	2	2	2	2	2	3	3	2	2	2	2	3	3	2	2
16	15	AML	1	1	3	3	1	1	1	1	1	1	2	2	1	1	1	1	1	1	0	0
17	11	ALCL	1	0	1	1	1	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0
18	7	All	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
19	7	All	1	2	2	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0
20	9	All	2	1	2	2	1	1	1	1	2	2	2	2	2	2	2	2	2	2	0	0
21	7	Thalassemia major	1	2	2	1	1	1	1	1	0	0	1	1	1	1	0	0	0	0	0	0
22	6	Hurler syndrome	1	1	1	1	1	1	1	1	0	0	1	1	1	1	1	1	1	1	0	0
23	10	All	0	1	1	1	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0

Table 1 continued

S. no	Age (years)	Diagnosis	I feel tense or wound up	Anxiety	I still enjoy the things i used to enjoy	Depression	I get a sort of feeling as if something awful is about to happen	Anxiety	I can laugh and see the funny side of things	Depression	Worrying thoughts go through my mind:	I feel cheerful	Depression	I can sit at ease and feel relaxed	Anxiety	I feel as if i am slowed down	Depression	I get a sort of frightened feeling like butterflies in the stomach	Anxiety	I have lost interest in my appearance	Depression
24	7	Hyper igm syndrome	1	1	1	0	0	0	0	1	0	1	1	1	1	1	0	0	0	0	0
25	7	Thalassemia major	1	2	2	0	0	0	0	1	0	1	1	1	1	1	0	0	0	0	0
26	5	Thalassemia major	0	0	0	0	0	0	1	1	0	1	1	0	0	1	0	0	0	0	0
27	8	Thalassemia major	1	1	1	0	0	0	0	1	0	1	1	0	0	0	1	1	1	1	1
28	8	Aplastic anemia	1	1	1	0	0	0	0	1	1	1	1	1	1	0	0	0	0	1	1
29	8	Thalassemia major	0	0	0	0	0	0	1	1	0	1	1	1	1	1	0	0	0	0	0
30	15	Thalassemia major	1	1	1	2	1	1	1	2	1	2	1	1	1	1	2	2	0	0	0
S. no	Age (years)	Diagnosis	I feel restless as i have to be on the move	Anxiety	I look forward with enjoyment to things	Depression	I get sudden feelings of panic:	Anxiety	I can enjoy a good book or radio or tv program:	Depression	A	Score of anxiety	Score of depression	Total score of anxiety + depression	A-0-7 = normal B-8-10 = borderline abnormal (borderline case) C-11-21 = abnormal (case) get a sort of frightened feeling like butterflies in	Age < 10 years—1, age > 10 years—2	Kuppuswamy socioeconomic scale, 1—upper, 2—upper middle, 3—lower middle, 4—upper lower, 5—lower				
1	5	Thalassemia major	0	1	1	1	0	0	0	6	4	10	B	B	1	1	2				
2	8	Thalassemia major	1	1	1	1	0	0	0	6	2	8	B	B	1	1	3				
3	15	Aplastic anemia	2	0	0	2	0	0	0	9	1	10	B	B	2	2	4				
4	7	Thalassemia major	1	0	0	1	0	0	0	8	1	9	B	B	1	1	2				
5	10	ALCL	3	3	3	3	3	3	3	18	16	34	C	C	1	1	2				
6	5	Thalassemia major	1	1	1	2	1	1	1	10	7	17	C	C	1	1	2				
7	13	Fanconi anemia	1	1	1	1	1	1	1	8	8	16	C	C	2	2	3				
8	5	Thalassemia major	1	1	1	2	1	1	1	9	6	15	C	C	1	1	2				

Table 1 continued

S. no	Age (years)	Diagnosis	I feel restless as I have to be on the move	Anxiety	I look forward with enjoyment to things	Depression	Anxiety	I get sudden feelings of panic:	I can enjoy a good book or radio or tv program:	Score of anxiety	Score of depression	Total score of anxiety + depression	A-0-7 = normal B-8-10 = borderline abnormal C-11-21 = abnormal (borderline case) (case) get a sort of frightened feeling like butterflies in	Age < 10 years—1, age > 10 years—2	Kuppuswamy socioeconomic scale, 1—upper, 2—upper middle, 3—lower middle, 4—upper lower, 5—lower
9	10	Aplastic anemia	1	1	1	1	1	1	1	7	6	13	C	1	2
10	12	All	1	1	1	2	1	1	1	9	4	13	C	2	1
11	8	Thalassemia major	0	0	1	1	0	0	0	5	2	7	A	1	1
12	14	Fanconi anemia	1	1	1	2	1	1	1	10	8	18	C	2	2
13	7	Thalassemia major	1	0	1	1	1	1	1	7	4	11	C	1	1
14	9	AML	0	0	1	1	0	0	0	5	2	7	A	1	1
15	14	All	3	3	3	3	3	3	3	18	13	31	C	2	1
16	15	AML	1	1	1	2	1	1	1	10	7	17	C	2	3
17	11	ALCL	1	0	1	1	0	1	0	7	2	9	B	2	1
18	7	All	0	1	1	1	1	1	1	6	6	12	C	1	2
19	7	All	1	1	1	1	1	1	1	6	7	13	C	1	1
20	9	All	1	1	1	1	1	1	1	11	7	18	C	1	1
21	7	Thalassemia major	1	1	1	1	1	1	1	5	6	11	C	1	2
22	6	Hurler syndrome	0	1	1	1	0	0	0	5	5	10	B	1	2
23	10	All	0	0	1	1	1	1	1	2	4	6	B	1	1
24	7	Hyper igm syndrome	1	0	1	1	1	1	1	4	4	8	B	1	3
25	7	Thalassemia major	0	1	1	1	1	1	1	3	6	9	B	1	2
26	5	Thalassemia major	1	0	1	1	0	0	0	2	3	5	A	1	2
27	8	Thalassemia major	0	1	1	1	1	1	1	3	5	8	B	1	3
28	8	Aplastic anemia	0	0	1	1	0	0	0	4	3	7	A	1	2

Table 1 continued

S. no	Age (years)	Diagnosis	I feel restless as i have to be on the move	I look forward with enjoyment to things	I get sudden feelings of panic:	I can enjoy a good book or radio or tv program:	Score of anxiety	Score of depression	Total score of anxiety + depression	A-0-7 = normal B-8-10 = borderline abnormal C-11-21 = abnormal (borderline case) (case) get a sort of frightened feeling like butterflies in	Age < 10 years—1, age > 10 years—2	Kuppuswamy socioeconomic scale, 1—upper, 2—upper middle, 3—lower middle, 4—upper lower, 5—lower
29	8	Thalassemia major	1	0	1	0	3	3	6	A	1	3
30	15	Thalassemia major	1	1	2	1	10	7	17	C	2	3

References

1. Zigmond AS, Snaith RP (1983) The hospital anxiety and depression scale. *Acta Psychiatr Scand* 67(6):361–370
2. Bjelland I, Dahl AA, Haug TT, Neckelmann D (2002) The validity of the hospital anxiety and depression scale. An updated literature review. *J Psychosom Res* 52(2):69–77
3. O'Donnell E (2013) The distress thermometer: a rapid and effective tool for the oncology social worker. *Int J Health Care Qual Assur* 26(4):353–359
4. Donovan KA, Grassi L, McGinty HL, Jacobsen PB (2014) Validation of the distress thermometer worldwide: state of the science. *Psychooncology* 23(3):241–250