



The Role of Music Therapy in Post-Operative Analgesia- Study in Elderly

Dr Asma Shah

JUNIOR CONSULTANT FAMILY PRACTICE, DEPT. OF GENERAL MEDICINE, VHS HOSPITAL , CHENNAI.

Dr. S. Sindhuja

SENIOR RESIDENT , DEPT. OF GENERAL MEDICINE, CSI KALYANI, CHENNAI.

ABSTRACT

A randomized prospective clinical study was conducted involving 60 patients with ASA I & II risk in the age group 18-60 years of either sex undergoing elective surgeries under general anaesthesia after obtaining informed written consent. Group M received music therapy preoperatively for 20 minutes, throughout the intra operative period and postoperatively for 30 minutes through headphones. Group C were made to listen to music only preoperatively and intraoperatively headphones was placed with no music. Significant statistical difference in the blood pressure $p < 0.001$ observed during the intraoperative and postoperative period in both the groups. The pain scores were significantly lower in the study group ($P < 0.001$). The study group had a statically significant longer duration of postoperative analgesia. Thus we conclude that music therapy is a safe, cheap and effective method in providing the postoperative analgesia as an adjuvant to conventional methods in elderly.

KEYWORDS :

BACKGROUND AND OBJECTIVE

Pain is an affective subjective phenomenon that is influenced by physiological and diverse psychological and emotional processes¹. Pain is characteristically associated with behavioral arousal and a stress response consisting of increased blood pressure, heart rate and plasma cortisol levels². Pain undermines mood, sleep patterns, physical and social functioning, and hence impairs quality of life. Pain in the immediate postoperative period is one of the major concerns of health professionals looking after patients who had a surgery³. Postoperative pain is a dynamic symptom that varies in intensity⁴. Poor pain management can lead to depression, anxiety, irritability, disturbances in sleep, and impaired physical function⁵. Recent pain research has shown that neoplastic changes can occur when pain is under or untreated. These changes have been correlated with chronic pain in the form of hyperalgesia (hypersensitivity to a painful stimulus), neuropathic pain (originating from the nervous system), and allodynia (the sensation of pain in response to a benign stimulus and may have undesired side effects like constipation, respiratory depression, and allergic reactions⁶).

MATERIALS AND METHODS

A randomized prospective clinical study was conducted involving 60 patients with ASA I & II risk in the age group 60 years and above of either sex undergoing elective surgeries under general anaesthesia after obtaining informed written consent. Patients were randomly allocated into two groups of 30 each. Group M received music therapy preoperatively for 20 minutes, throughout the intra operative period and postoperatively for 30 minutes through headphones. Group C were made to listen to music only preoperatively and intraoperatively headphones was placed with no music. Hemodynamic parameters, VAS scores, NRS scores and the time for rescue analgesia were recorded and compared.

RESULTS AND OBSERVATIONS

The age distribution among the groups were comparable with a p value =0.365. Female were 83.3% the gender distribution were comparable between the groups with a p value=1.000. The duration of surgery in both the groups were comparable with $p= 0.161$. The trends in systolic, diastolic and mean arterial pressure was no much variation from the baseline in both the groups during preoperative and intraoperative period, there was significant statistical difference in blood pressure among the group post operatively. There were statistical significant changes $p < 0.001$ observed during the intraoperative and postoperative period in both the groups. The heart rate was stable throughout the study in both the groups. The pain scores were significantly lower in the study group $p < 0.001$ and had longer duration of postoperative analgesia.

Pain Scores

Table 1: VAS score at the end of the surgery and NRS score at the end of the surgery

VAS score	Group C		Group M		NRS score at the end of the surgery %	Group C		Group M	
	No	%	No	%		No	%	No	%
1-50	3	10.0	14	46.7	1-3	0	0.0	6	20.0
51-60	11	36.7	14	46.7	4-7	21	70.0	22	73.3
61-70	5	16.7	0	0.0	7-10	9	30.0	2	6.7
71-80	9	30.0	2	6.7	Total	30	100.0	30	100.0
>80	2	6.7	0	0.0	1-3	0	0.0	6	20.0
Total	30	100.0	30	100.0					

There was statistically significant lower scores in Group M with $p=0.001$.

Table 2: Comparison of time for rescue analgesia in two groups studied

Time for rescue analgesia	Group C		Group M	
	No	%	No	%
1-30	22	73.3	3	10.0
31-60	8	26.7	13	43.3
61-90	0	0.0	10	33.3
91-120	0	0.0	4	13.3
Total	30	100.0	30	100.0
Mean ± SD	24.50±9.50		61.83±24.90	

This is the table showing the time for rescue analgesia in both the groups. A statistically significant difference was observed in both the groups.

Discussion

Music moves from the ears to the centre of the brain and the limbic system, which governs the emotional responses of pain and pleasure as well as such involuntary processes as body temperature and blood pressure. Researchers have found that integration between various individual centers and global brain function only occurred for series of notes, that is, was only promoted by melody sequences⁷. The utilization

tion of music therapy as a mean for pain management is based on the premise that music may alter the components of the total pain experience and thus decreases pain perception⁸. Postoperative pain when inadequately treated can lead to trouble with rest and sleep, delayed wound healing, patient dissatisfaction, longer hospitalization, and increased costs⁹.

Good et al.¹⁰ in their study in 2000 investigated the effects of relaxation, music, and the combination of relaxation and music on postoperative pain, across and between two days and two activities (ambulation and rest) and across ambulation each day. They found them effective for pain across ambulation on each day, across ambulation and across rest over both days.

Conclusion

Thus we conclude that music therapy is a safe, cheap and effective method in providing the postoperative analgesia as an adjuvant to conventional methods.

References

1. Renn, C.L., Dorsey, S.G. The physiology and processing of pain: a review. *AACN Clinical Issues*.2005; 16 (3): 277–290.
2. Howard L.F., Joseph B.M. Pain: Pathophysiology and Management. In: Anthony S.F., Eugene B., Dennis L.K., Stephen L.H., Dan L.L., Joseph L.et al. (eds.). *Harrison's principles of Internal Medicine*.17th ed.vol1.Burr ridge: McGraw-Hill.2008.p.81-87.
3. Strassels SA, Chen C, Carr DB. Postoperative analgesia: economics, resource use, and patient satisfaction in an urban teaching hospital. *Anaesthesia and Analgesia* .2002; 94:130–7.
4. Good M., Stanton-hicks M.,Grass J . A., Anderson G.C., Lai H. -L.,Roykulcharoen V., Adler P.A. Relaxation and music to reduce postsurgical pain. *Journal of Advanced Nursing*.2001;33(2), 208-215.
5. International Association for the Study of Pain (2008). Global year against cancer pain: Fact sheets. Retrieved from http://www.iasp-pain.org/ate.cfm?Section=Fact_Sheets_1&Template=/CM/HTMLDisplay.cfm&ContentID=7198.
6. Coderre, T. J., Mogil, J. S., & Bushnell, M. C. The Biological Psychology of Pain. In: Weiner I. B.et al (ed) *Handbook of Psychology*. Vol 3. Hoboken, NJ: John Wiley & Sons:2003.p. 237-268.
7. Aniruddh D et al. Temporal patterns of human cortical activity reflect tone sequence structure.*Nature* 2000;401:80-4.
8. Levreault M L. Music therapy in pain and symptom management. *J Palliat Care*. 1993;9(4):42-8.
9. Stefano George, B., Zhu, W., Cadet, P., Salamon, E., Mantione, K.J.,. Music alters constitutively expressed opiate and cytokine processes in listeners. *Medical Science Monitoring*. 2004; 19:18–27.
10. Good M, Chin CC. The effects of Western music on postoperative pain in Taiwan. *Kao-hsiung J Med Sci*. 1998;14(2):94-103.