



**DRUG INDUCED ISCHEMIC STROKE IN A POST CHEMOTHERAPY STATE  
PATIENT ALONG WITH CVA AND LYMPHEDEMA**

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**ABSTRACT**

Breast cancer is the most commonest cancer in worldwide and has ranked number one in cancer among Indian females. Global burden of breast cancer is expected to cross 2 million by the year 2030. A patient with known case of carcinoma left breast, post chemotherapy state with lymphedema of left upper limb with CVA was seen. During patient counseling it was found that it is she was taking tablet Tamoxifen 20mg from the past 8yrs. Tamoxifen is having a serious side effect of causing Stroke in the patients. At first it was estimated that the patient had hemorrhagic stroke. But on evaluation it was confirmed that it was a drug induced (Tamoxifen) ischemic stroke. Better health awareness and availability of breast cancer screening programme, counseling the patient regarding disease and medications can reduce the risk of serious side effects and adverse effects. It is utmost important to provide counseling to the patients to minimize the risk of drug related problems.

**KEYWORDS:** Breast cancer, Drug induced, Lymphedema, Patient counseling.

**INTRODUCTION**

Breast cancer is the most common female cancer in the United States, the second most common cause of cancer death in women (after lung cancer), and the leading cause of death in women ages 45 to 55. Cancer is becoming a major cause of morbidity and mortality in developing countries.<sup>[1]</sup> The global burden of breast cancer is expected to cross 2 million by the year 2030, with growing proportions from developing countries.<sup>[2]</sup> Breast cancer has ranked number one cancer among Indian females with adjusted rate as high as 25.8 per 100,000 women mortality 12.7 per 100,000 women.<sup>[3]</sup> Some people develop a post surgical complications like seroma, lymphedema etc. So there is a need to bring awareness among people about breast cancer. Tamoxifen is SERM (selective estrogen receptor modulator) used in treating breast cancer. It blocks the effects of estrogen in the breast tissue by attaching to the estrogen receptors in breast cells. It is used for the treatment of both early and advanced estrogen receptor (ER)-positive breast cancer in pre- and postmenopausal patients.<sup>[4]</sup> Tamoxifen commonly causes a range of side effects such as hot flashes and sweating<sup>[5,6]</sup> and less often more serious adverse events (AEs) such as endometrial cancer and thromboembolic events.<sup>[7,8]</sup> Tamoxifen is also associated with several of positive effects.

**CASE REPORT**

A 83 years female patient with known case of post carcinoma of left breast along with lymphedema was admitted in General medicine, FM-IV ward with the chief complaints of giddiness, unorientedness, not able to speak, loss of appetite since 3 days and had trauma over the head 3 days back. Her past medical history revealed that she is a known hypertensive and on medication. She got operated for hand fracture 10yrs back. Mastectomy was done for left breast carcinoma 8yrs back. Due to cerebrovascular accident (CVA) it was estimated that the patient had hemorrhagic stroke. But, during patient counseling it was found that it is she was taking tablet Tamoxifen 20mg daily from past 8yrs. Tamoxifen is having a serious side effect of causing Stroke in the patients. Later on evaluation it was confirmed that it was a drug induced (Tamoxifen) ischemic stroke.

This is a case of drug induced ischemic stroke in a post chemotherapy state patient along with CVA and lymphedema. On the day of admission the patient was lethargic and had decreased appetite. Vitals were monitored. BP: 150/90mmHg, PR: 80bpm, P/A- soft. Patient was conscious but not coherent. She was a known hypertensive but not diabetic. So the following medications was given. Injection Neurtopil 5ml BD, Tablet Pantop 40mg IV OD, Tablet Amlodipine 5mg

PO,OD and Foley's catheterization was kept. She was advised to take blood and electrolyte test.

On day - 2 vitals were monitored. BP was 140/90mmHg, PR: 80bpm, CVS: S<sub>1</sub>S<sub>2</sub> +, P/A:Soft. Her investigations showed **Haemoglobin:12.08gm/dl**(12-15g/dl), **RBS: 80mgs/dl** (normal 80 to 120mgs/dl), **WBC: 10700cumm** (4,300-10,800cumm), **Neutrophils:64%** (40%-60%), **Lymphocytes:19%**(20%-40%), **Eosinophils: 4%** (1% - 4%), **Monocytes: 7%**, **Bilirubin urea: 23mg/dl** (15-45mgs/dl), **Serum creatinine: 0.5mg/dl** (0.5-1.5 mgs/dl), **Total Bilirubin: 1.3** (Upto 1mg/dl), **Direct Bilirubin: 0.5mg/dl**(Upto 0.2mgs/dl), **Indirect Bilirubin: 0.8mg/dl**(normal 0.2-0.8mgs/dl), **Uric acid: 5.2mg/dl** (3-7), **Sodium : 146 m.eq/l** (135-155), **Potassium: 4.4meq/l** (3.5-5.5), **Chlorides: 112.7m.eq/l** (95-106). After watching the readings the doctor advised to continue the same treatment along with Inj. Mannitol 100mg IV TID. It was suspected that it is a CVA with Hemorrhagic stroke with Lymphedema. During patient counseling it was found that the patient is taking Tablet Tamoxifen 20mg daily since 8yrs. The usual usage of Tamoxifen after chemotherapy is five years. But here the patient took for 8 yrs. The prescriber advised to take CT scan along with ECG.

On day - 3 the patient was conscious, PR: 78bpm, BP:130/80mmHg, CVS: S<sub>1</sub>S<sub>2</sub> +, P/A: Soft and the

#### X-Ray showing Lymphedema



following treatment was given. Tablet Ecosprin 150mg PO, OD. Tablet Atorvastatin 40mg PO, OD, Injection Nootropil 4ml IV TID, Tablet Pantop 40mg IV OD, Tablet Amlodipine 5mg PO OD, RT feed 150ml/2<sup>nd</sup> hrly, Tablet Clopitab 75mg PO OD.

On Day-4 vitals were normal. BP:130/90mmHg, PR: 80bpm, CVS: S<sub>1</sub>S<sub>2</sub> +, P/A:Soft. CT scan revealed that it was a ischemic stroke. Right parietal lobe infarct and B/L periventricular ischemic changes was observed. Same treatment was continued. Based on the subjective and objective evaluation the patient was diagnosed as having "Drug induced stroke in a post chemotherapy state along with lymphedema."

On Day-5 PR was 78bpm, BP: 130/80mmHg, CVS: S<sub>1</sub>S<sub>2</sub> +, P/A:Soft. So, they continued the same treatment and on Day-6 PR was 80bpm, BP:130/90mmHg, CVS: S<sub>1</sub>S<sub>2</sub> +, P/A:Soft. The prescriber stopped Tablet Clopitab and changed the dose of Tablet Ecosprin 325mg, PO, OD and continued same treatment. On Day - 7, PR was 78bpm, BP:130/80mmHg, CVS: S<sub>1</sub>S<sub>2</sub> +, P/A:Soft. Patient was in recovery position. So, they continued same treatment. On Day- 8, PR was 80bpm, BP:130/90mmHg, CVS: S<sub>1</sub>S<sub>2</sub> +, P/A:Soft. The following treatment was given. Tablet Ecospirin 150mg, PO, OD, Tablet Atorvastatin 40mg, PO, OD, Tablet Pantop 40mg, IV, OD, T. Amlodipine 5mg, PO, OD, IVF - 2 pint DNS, 1 pint RL was given. On the next day the patient left against medical advice.



#### DISCUSSION

Breast cancer is the most common cause of cancer spreading all over the world. Delayed disease presentation due to lack of awareness, illiteracy, financial constraints in some regions leads to late diagnosis which in turn increases mortality rates. Breast cancer early diagnosis, initial assessment and treatment is crucial.

After the treatment, follow up is very important to avoid complications, side effects and adverse effects. The patient has to be counseled regarding disease, medication, life style modifications, adverse drug reactions, side effects. So that if he/she experience any kind of signs or symptoms to contact the doctor immediately without any delay.

This is a known case of drug induced ischemic stroke in a post chemotherapy state patient of left breast along with lymphedema and Cerebro vascular accident. In this case the patient was admitted in the hospital after cerebro vascular accident with giddiness, unorientedness, loss of appetite and lymphedema. At first it was thought it was a hemorrhagic stroke. During patient counseling we got to know that she was a post carcinoma patient, on chemotherapy, taking Tablet Tamoxifen 20mg daily since 8years. She got operated for hand fracture 10yrs back and she was a known hypertensive and on medication but not a diabetic. Later on evaluation (CT scan) it was confirmed that it was a drug induced (Tamoxifen) ischemic stroke. In this case drug induced ischemic stroke had seen which is a very rare condition. Although Tamoxifen is used to treat breast cancer but it has serious side effects including blood clots, stroke and endometrial cancer. It can also cause abnormal vaginal bleeding or discharge, pain or pressure in pelvis, shortness of breath, leg swelling or tenderness, chest pain, weakness, dizziness, numbness, vision problems, sudden severe headache. Some of the most common side effects are nausea, fatigue, bone pain, depression, headache, dry skin and constipation. Some women on Tamoxifen reported memory problems while taking the medicine while no definitive results are available for this memory problem. There is evidence of an increased incidence of thromboembolic events, including deep vein thrombosis and pulmonary embolism, during Tamoxifen therapy.<sup>[9]</sup>

Tamoxifen usually is taken for up to 5 years, but women with advanced-stage breast cancer may continue taking tamoxifen as long as it is working well. As Tamoxifen is having serious side effect of causing stroke and deep vein thrombosis and the same was confirmed by doing CT Scan. The patient was treated for the present condition and the drug was stopped. Intervention was done and the side effect was documented.

### CONCLUSION

In this study we made an attempt to bring awareness about the disease complications, side effects, adverse drug reactions, medication errors, drug related problems among the health care professionals, nurses and the patients. Tamoxifen induced side effect was reported and documented. Intervention and patient counseling was done. Awareness of the symptoms and the need for screening are important ways of reducing the risk. Better health awareness and availability of breast cancer screening program and treatment facilities would cause a favorable and positive clinical picture in the country. There is a need of clinical pharmacist in every hospital as the doctors don't have much time to interact with the patients. It is utmost important to keep a clinical pharmacist in every health care centre.

There is a need to create awareness levels of risk factors for breast cancer among Indian women and health care professionals. Indian women need to be aware of both

modifiable and non-modifiable risk factors for breast cancer to adopt appropriate practices for prevention. There should be an urgent call for more effective nation- and state-wide cancer literacy programmes, as well as engagements with community-level organisations and the health system.

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### REFERENCES

1. Ferlay J, Soerjomataram I, Ervik M, et al. GLOBOCAN 2012 v1.0, Cancer Incidence and Mortality Worldwide: IARC Cancer Base No. 11. Lyon, France: International Agency for Research on Cancer, 2013. <http://globocan.iarc.fr> (accessed Dec 23, 2013).
2. Jemal A, Bray F, Melissa MC, Jacques F, Elizabeth W, Forman D. Global cancer statistics. *CA Cancer J Clin*, 2011; 61: 69–90.
3. Shreshtha Malvia et al, Epidemiology of breast cancer in Indian women- *Asian Pacific journal of clinical oncology*, August- 2017.
4. Jordan VC. Fourteenth Gaddum Memorial Lecture. A current view of tamoxifen for the treatment and prevention of breast cancer. *Br J Pharmacol*, 1993; 110: 507-517.
5. Love RR, Cameron L, Connell BL, Leventhal H. Symptoms associated with tamoxifen treatment in postmenopausal women. *Arch Intern Med*, 1991; 151: 1842- 1847. 42.
6. Day R, Ganz PA, Costantino JP, Cronin WM, Wickerham DL, Fisher B. Healthrelated quality of life and tamoxifen in breast cancer prevention: a report from the National Surgical Adjuvant Breast and Bowel Project P-1 Study. *J Clin Oncol*, 1999; 17: 2659-2669.
7. Early Breast Cancer Trialists' Collaborative Group. Effects of chemotherapy and hormonal therapy for early breast cancer on recurrence and 15-year survival: an overview of the randomised trials. *Lancet*, 2005; 365: 1687-1717.
8. Fisher B, Costantino JP, Wickerham DL et al. Tamoxifen for the prevention of breast cancer: current status of the national surgical adjuvant breast and bowel project P-1 study. *J Natl Cancer Inst*, 2005; 97: 1652-1662.
9. Taken from FDA details on Tamoxifen citrate 08-27-04.