Effect Of Mass Drug Administration On Lymphatic Filariasis: Economic And Social Impact

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Abstract : Introduction: Lymphatic filariasis, the second most common vector borne parasitic disease after malaria. According to WHO, lymphatic filariasis is the second most common cause of long term disability after mental illness. The Government of India has accorded a high priority for elimination of this infection through mass chemotherapy programme (MDA). Material and Methods: This study was conducted to see the effect of MDAon lymphatic filariasis. As lymphatic filariasis control programme is a national programme and it is controlled and monitored by health services, we collected and analyzed the data from four sentinel centers from Nagpur district from 2004 to 2012. Result and Conclusion: We observed that after repeated administration of MDA the Mf rate has declined over a period of time and helped to reduce the transmission from one person to other. It also prevents the chronic disability and increases the marriage prospectus in young females in endemic area. The cost of preventing one case of chronic disease is very low as compared to other chronic diseases. So we concluded that repeated subsequent rounds of MDA is effective. It is economical with social benefits. [Gedam D et al NJIRM 2013; 4(4) : 98-99]

Key Words: : Lymphatic filariasis, Mass Drug Administration, Mf rate.

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Introduction : Lymphatic filariasis (LF), the second most common vector borne parasitic disease after malaria, is found in over 80 tropical and subtropical countries. WHO estimates that 120 million people are infected with the parasite, with one billion at risk. According to WHO, lymphatic filariasis is the second most common cause of long term disability after mental illness. One third of people infected with lymphatic filariasis live in India.[1] Lymphatic filariasis caused by Wuchereria bancrofti and Brugia malayi is an important public health problem in India. Both parasites produce essentially similar clinical presentations in humans, related mainly to the pathology of the lymphatic system. Filariasis is endemic in 17 states and 6 union territories with about 553 million people at risk of infection. The Govt. of India has accorded a high priority for elimination of this infection through mass chemotherapy programme [annual single dose Diethyl carbamazine (DEC) 6 mg/kg of body weight plus albendazole repeated four to six times]. This campaign, mass drug administration (MDA), has become a part of the National Vector Borne Disease Control Programme in 2003 under National Health Policy 2002 and aims to eliminate filariasis by 2015.[2]

Material and Methods: We collected and analyzed the data from 4 sentinel centres from Nagpur District. The four sentinel surveillance centres were selected as per guidelines.[3]

In Silly village the Mf in 2004 was 3.63 % and in 2012 it was 0.38 %. In Sale-Sahari the Mf rate came down from 3.24 % in 2004 to 1.18 in 2012. In village Bhovari the Mf rate was 11% in 2004 while it was reduced to 1.98 % in 2012. In Rajababa ward Mf rate was 3.30 in 2004 but in 2012 there was not a single positive Mf case. Z test was applied for determining the P value and significance (P value < 0.05)

Table 1: The 4 sentinel surveillance centres

S.No	Name of Taluka	Name of PHC	Subcentre	Name of Sentinel/ Fix Spot
1	Kuhi	Titur	Silli	Silli
2	Bhivapur	Bhivapur	Sale-Sahari	Sale-Sahari
3	Kamptee	Gumthala	Awandhi	Bhovari
4	Umred	R.H.Umred	Umred	Rajababa Ward

Observations:

Table2: Showing baseline data from 2004 to 2012 with Mf rate.

S.No				
1				
2				
3				

Discussion: Lymphatic filariasis is a parasitic disease transmitted by mosquito bite which causes disability and adversely impacts the economy of the developing countries where it is endemic. (WHO 2004) The World Health Organization Global Programme to eliminate lymphatic filariasis relies on mass drug administration of two drugs annually for 4-6 years. The goal is to reduce the reservoir of microfilaria in the blood to a level insufficient to maintain transmission by the mosquito. [4] In the present study Mf rate in four sentinel sites in 2004 was ranging from 3.24 % to 11% but with repeated and subsequent rounds of MDA it came down to 0.00 % to 1.98 %. This decline is significant as with MDA lymphatic filariasis is on the verge of elimination. The administration of six rounds of DEC to 54 – 75 % of the population reduced the Mf prevalence from 13.2 % to 1.9 %.[5] After five rounds of MDA in Egypt the prevalence of lymphatic filariasis was reduced to less than 1% in majority of LF endemic villages(Moses J). MDA has minimum side effects in 5 – 10 % of the people who consume MDA. [6] The cost of preventing one case of chronic disease is Rs 420.50. The economic benefits incurred by preventing the chronic disease are much higher and includes a saving of 58.24 working days per annum per case which wages of Rs 1969.50, along with the treatment cost the total annual economic saving is Rs 2041.50 which is significant amount in many poor countries. The amount saved for 11 years of economic activity is estimated to be Rs. 22456.50. Drug manufacturing local cost is only 0.15 per 100 mg tablet and that by multinational companies is Rs. 0.30. [5] The implementation of an effective national programme for the elimination of lymphatic filariasis will provide means for sustainable development at national, local and community level. [7] Prevention of chronic disease leads to better educational and employment opportunities, social acceptability.[5] MDA increases the marriage prospects in young females in rural area .[8]To conclude MDA is effective with repeated and subsequent rounds. It is economical with social benefits and to increase its efficiency directly observed treatment should be encouraged.

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