

# Omeprazole Induced Chronic Cough in a Non - Smoking Indian Woman

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**Abstract:** ***Objective:** To report a case of persistent non productive chronic cough due to omeprazole therapy in a non - smoking Indian woman of middle age. **Case summary:** A 38 years old Indian woman presented with persistent non - productive chronic cough due to omeprazole which was initiated due to dyspepsia. Nature of the cough was dry, persistent, non - spasmodic. Primary diagnosis was done as Gastroesophageal Reflux Disease (GERD) and omeprazole continued for 2 months. Later other cough related workups had been done to know the cause of chronic cough, but couldn't get any answer. After literature search omeprazole discontinued and ranitidine started for dyspepsia. Finally cough resolved after omeprazole discontinuation. **Discussion:** Asthma, post nasal drip, GERD etc are most common causes of non - productive chronic cough in non - smokers. Although drug induced chronic cough also been reported in many patients. Among them Angiotensin Converting Enzyme Inhibitors (ACEi) are most common, mostly 40%. Though package insert of omeprazole doesn't include this adverse event. In this patient temporal relationship was present and causality was probable. Though the mechanism was not clear. **Conclusion:** Chronic dry cough can be seen as a result of omeprazole therapy. Prescriber and consumer both should be aware of this adverse drug reaction.*

**Keywords:** adverse drug reaction, omeprazole, chronic cough, dry cough

## 1. Introduction

Case reports on drug induced chronic non - productive cough mostly consisted of ACEi induced.<sup>1</sup> Very less data available on other drugs which may show similar type of adverse drug reaction. Here a case report on omeprazole induced chronic non - productive cough has been reported.

## 2. Case History

A 38 years old woman came to me for the management of chronic cough which was started after taking omeprazole. After using the drug for more than 1 month she started complaining of cough which was non productive in nature. Primary diagnosis was made GERD induced cough and omeprazole continued. But cough did not subside after continuing the drug another 2 months. Patient was non - smoker, did not have any exposure to toxic fume. No significant health problem found. Her reports of blood count, sputum for tuberculosis, high resonance computed tomography (HR CT) scan, maxilla facial CT scan, bronchoscopy came clean. Arterial blood gas analysis, spirometry and laryngoscopy reports also came normal. Patient now not showing any complication due to GERD. So, omeprazole stopped and ranitidine started due to functional dyspepsia. After stopping omeprazole cough subsided within few days. Patient denied rechallenge during follow up after 1 month.

## 3. Discussion

Cough more than 8 weeks in adults known as chronic cough.<sup>2</sup> Causative agent for chronic cough can be single agent, seen in 32 - 82% cases or can be multiple, seen in 18 - 62% cases. Most common causes of chronic cough in non - smokers are asthma, post nasal drip, GERD etc.<sup>3 - 5</sup> Among these GERD accounts for 10 - 25% cases.<sup>6</sup>

Possible mechanism of GERD associated cough is not clear. Micro or macro aspiration and aspiration associated hyper responsiveness of the respiratory tract may be behind this. GERD associated cough may be diagnosed with ambulatory Ph monitoring or endoscopy.<sup>7</sup> Though improvement after empiric trial of Proton Pump Inhibitor (PPI) can be confirmatory.

Chronic cough without bronchospasm or pulmonary involvement can be due to drug related adverse event. Most common causing drugs are ACEi, ARBs, Beta blockers, PPIs, Leflunamide etc.<sup>1</sup> literature search showed most ADRs associated with ACEi.

According to United States package insert of omeprazole, cough has been noticed in 1.1% patients. Though many international clinical trials related to omeprazole failed to mention this adverse event.<sup>8</sup>

In this patient who already taken omeprazole for more than 3 months due to GERD and complaining of non - productive cough for more than 2 months. First it was thought to be GERD associated cough, that's why omeprazole continued. But later GERD related complication subsided, though cough was still there. After detailed physical and clinical examination we could not find any relevant cause for this cough. Literature search helped to find possible ADR of omeprazole which can be present as chronic non - productive cough. Later PPI discontinued and cough subsided within few days. This patient followed up after 1 month and no complication was there. Patient refused take omeprazole again, so rechallenge can not be done. This ADR was uploaded to Vigibase from AMC center of SSKM Hospital. AMC report no: IPGMER/May - 2023/019 and Worldwide unique ID: IN - IPC - 300770282. As per WHO UMC Causality assessment this ADR is probable in nature as temporal relationship and de - challenge both are positive.<sup>9</sup>

#### 4. Conclusion

Omeprazole induced chronic non-productive cough in non-smokers is very less documented ADR. So this is a honest attempt to educate prescribers as well as the consumers about the ADR due to omeprazole.

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#### References

- [1] Shim JS, Song WJ, Morice AH. Drug - Induced Cough. *Physiol Res.*2020 Mar 27; 69 (Suppl 1): S81 - S92. doi: 10.33549/physiolres.934406. PMID: 32228014; PMCID: PMC8604055.
- [2] Kaplan AG. Chronic Cough in Adults: Make the Diagnosis and Make a Difference. *Pulm Ther.*2019 Jun; 5 (1): 11 - 21. doi: 10.1007/s41030 - 019 - 0089 - 7. Epub 2019 Mar 13. PMID: 32026427; PMCID: PMC6966942.
- [3] Spanevello A, Beghé B, Visca D, Fabbri LM, Papi A. Chronic cough in adults. *Eur J Intern Med.*2020 Aug; 78: 8 - 16. doi: 10.1016/j. ejim.2020.03.018. Epub 2020 May 17. PMID: 32434660.
- [4] Kahrilas PJ, Altman KW, Chang AB, Field SK, Harding SM, Lane AP, et al; CHEST Expert Cough Panel. Chronic Cough Due to Gastroesophageal Reflux in Adults: CHEST Guideline and Expert Panel Report. *Chest.*2016 Dec; 150 (6): 1341 - 1360. doi: 10.1016/j. chest.2016.08.1458. Epub 2016 Sep 7. PMID: 27614002; PMCID: PMC6026249.
- [5] Wu J, Ma Y, Chen Y. GERD - related chronic cough: Possible mechanism, diagnosis and treatment. *Front Physiol.*2022 Oct 20; 13: 1005404. doi: 10.3389/fphys.2022.1005404. PMID: 36338479; PMCID: PMC9630749.
- [6] Madanick RD. Management of GERD - Related Chronic Cough. *Gastroenterol Hepatol (N Y).*2013 May; 9 (5): 311 - 3. PMID: 23943667; PMCID: PMC3740808.
- [7] Francis DO. Chronic Cough and Gastroesophageal Reflux Disease. *Gastroenterol Hepatol (N Y).*2016 Jan; 12 (1): 64 - 6. PMID: 27330507; PMCID: PMC4865789.
- [8] Package insert. Prilosec (omeprazole). Wayne, PA: Astra Pharmaceuticals, 2002. [www.astrazeneca-us.com/pi/Prilosec.pdf](http://www.astrazeneca-us.com/pi/Prilosec.pdf) (accessed 2023, March 20).
- [9] WHO - UMC system for standardised case causality assessment: available from <https://www.who.int/publications/m/item/WHO-causality-assessment>. (Accessed on 2023, March 20)