

# Are Generic Medicines being Effective as Branded Medicines: A Review of Experiments Based Research

**Deepak Varshney and Kalicharan Shukla**

National Council of Applied Economic Research, New Delhi

<sup>1</sup> The emails of corresponding authors are [deepak.varshney.eco@gmail.com](mailto:deepak.varshney.eco@gmail.com) and [shuklakalicharan1@gmail.com](mailto:shuklakalicharan1@gmail.com). We would like to acknowledge the research support from National Council of Applied Economic Research, New Delhi. Authors are solely responsible of any errors.

*The paper examines the quality of the generic medicines as compared to branded medicines. It reviews some experiment based research paper to evaluate the effectiveness of generic medicines. Second, it uses the retailers' survey on five analgesic and anti-inflammatory and anti gastric medicines, to examine the effectiveness of the generic version of the medicines as compared to the branded version. The survey shows that about 76 percent of the retailer's trade in generic version of medicines. The result shows that for each of the selected medicine, more than 75 percent of the retailer's reported the effectiveness of generic version of medicines as compared to branded medicines.*

Keywords: Medicines, Generic, Branded etc.

## **Introduction**

The use of generic medication is constantly increasing because of its cost effectiveness

nature as compared to the branded medicines especially in developing countries. But, there is still a majority of the poor population exist which are not able get medicines because of the affordability issues. Despite of the fact that generic medicines have been manufactured with the same raw material and under similar manufacturing conditions, but still these are generally supposed to be as inferior quality to the branded ones. The main reason of cost effectiveness of generic medication is because of its low expenditure on marketing of drugs as compared to branded medicines. In general, the branded medicines have been promoted to medical practitioners, to prescribe their brand on the patient's prescription. Medical practitioner has a choice to prescribe formulation by brand

name. For example, medical practitioner prescribes Ciplox 500 mg (manufactured by Cipla drugs), but not Ciprofloxacin 500 mg. This makes substitutability of generic medicine very difficult. In the other scenario, where the patient wants Unbranded drug with the same formulation to substitute themselves, they were make scared by saying the quality of generic drugs was not as effective as branded drugs. In this context, the main objective of the paper is that is that examine the quality and efficacy of generic drugs as compared to branded drugs. We review some experimental based studies on the comparison of quality and efficacy of drugs conducted in India.

In this context, the paper present the findings of some studies based on the experiments based research. Second, the paper examined the data on the effectiveness of generic medicines based on the perceptions of retailers.

The review of the some paper based on randomized control suggests that generic medicines are as effective as branded medicines, with the exception of a few. Second, the result of the retailers' survey

suggests that about 76 percent of the retailer traded in generic medicines. The majority of the retailer's reported the effectiveness of branded generic medicines as compared to branded medicines.

The paper is organized as follows. Second section presents the review based on RCT. Third section presents the description of the retailers' survey. Fourth section presents the result. Fifth section presents the conclusion.

### **Review**

This section summarizes the finding of some of the relevant studies which compares the quality of generic medicines as compared to branded medicines. This section reviews five papers based on quantitative methodology.

Sarkar et al. (1995) examined the bioequivalence of Tenormin vs. atenolol on 31 patients using a randomized control method with crossover. The study finds insignificant difference in reduction of Blood Pressure.

Chiang et al. (1995) examined the bioequivalence of Tenormin vs. atenolol on 23 patients using the double blind randomized control with cross over

method. The study finds insignificant difference in reduction of Blood Pressure. Mirfazaelian et al. (2003) examined the bioequivalence of Tenormin vs. atenolol on 12 patients using the double blind randomized control with cross over method. The study finds insignificant difference in reduction of Blood Pressure.

Sanderson and Lewis (1986) examined the bioequivalence of Inderal vs. Propranolol on 1700 using retrospective cohort study. The study finds an increased incidence of self-reported adverse effects among the group taking generic at initiation of the study. The difference disappears after all switched to the Inderal.

Senegal et al. (2011) examined the quality of five medicines namely; Alprazolam, Cetirizine, Ciprofloxacin, Fluoxetine and Lansoprazole for testing the efficacy. For efficacy, paper conducted; Identification test to identify the identity of drug molecule which was conducted through instrumental analysis using high performance liquid chromatography, chemical composition test whether comparative medicines have the same composition; uniformity of content,

uniformity of weight to see whether comparative medicine as uniform weight as branded medicine, and finally the test for dissolution. The result suggests that all the five selected medicine pass the Identification test. As far as chemical composition is concerned, all the five medicine, chemical composition appears in the prescribed range. Uniformity of content test was done only for alprazolam and cetirizine, the result appears in the prescribed range. Uniformity of test on five medicines, suggests the difference is in prescribed range. A dissolution test also shows positive results.

### **Retailer's Survey**

The survey was carried out in Aligarh district of Uttar Pradesh. About 75 retailers were selected for the survey. Out of 75 selected retailers, about 57 retailers sell generic medicines. It means that about 76% of the retailer's deal on generic medicines. For the observation from retailers, we select only analgesic and anti-inflammatory and anti-gastric medicines because response of these medicines comes very quicker and patient realize the effect of

these very quickly. These medicines used generally used multiple times by a patient.

Table 3 presents the selected generic-branded medicine for the analysis.

Table 1: Retailers sell generics

	Frequency	Percent	Cum. Percent
No	18	24	24
Yes	57	76	100
Total	75	100	

Source: Retailer’s Survey 2010

Out of 57 retailers who trade in generic medicines, about 48 retailers sell branded generic medicines while 9 retailers sell Unbranded generic medicines.

Table 2: Retailers sell branded generics

Sell Generics	Branded		Total
	Yes	No	
No	0	0	0
Yes	48	9	57
Total	48	9	57

Source: Retailer’s Survey 2010

Table 3: Selected medicines

Formulation	Generic Version	Brand Version
Omeprazole 20mg	Omee 20mg	Omez 20mg
Omeprazole 20mg+Domperindone 10mg	Omee D	Omez -D20mg
Diclofenac Sodium 50mg+Paracetamol 500mh	Funk Plus	Oxalgin
Paracetamol 500mg	Paracip 500mg	Crossing
Diclofenac Gel 30gm	Omnigel	Volini Gel

Source: Retailer’s Survey 2010

**Result: Effectiveness of selected generic medicines**

We have selected five basic formulations as noted earlier for examining the effectiveness of these formulations in their generic as compared to branded counterpart. The first formulation is omeprazole 20mg, the generic versions

were manufactured by Alkem Laboratories under the brand name Omee 20mg. However, the branded version is Omez 20mg which is manufactured by Dr. Reddy Laboratories.

The result shows that out of 57 retailers who sell generic medicines, about 48 retailers sell branded generics that is Omee

20mg, out of these 48 retailers, about 44 reported the quality of Omeo to be same as Omez 20mg. This means about 92% of the

retailer reported better quality of Omeo 20mg as compared to Omez 20mg.

Table 4: Retailers perception of effectiveness of Omeo

	Effectiveness		Total	Effectiveness	
	Yes	No		Yes (%)	No (%)
Branded					
Yes	44	4	48	92	8
No	0	9	9	0	100
Total	44	13	57	77	23

Source: Retailer’s Survey 2010

Out of 48 retailers who sell branded generics, about 46 reported the quality of Omeo-D to be same as ones-D 20mg. This

means about 96% of the retailer on the basis of their experience reported effectiveness of Omeo-D 20mg.

Table 5: Retailers perception of effectiveness of Omeo-D

	Effectiveness		Total	Effectiveness	
	Yes	No		Yes (%)	No (%)
Branded					
Yes	46	2	48	96	4
No	0	9	9	0	100
Total	46	11	57	81	19

Source: Retailer’s Survey 2010

Out of 48 retailers who sell branded generics, about 38 reported the quality of Paracip 500mg to be same as crossing 500mg. This means about 79% of the

retailer on the basis of their experience reported effectiveness of Paracip 500mg comparable to Crocin 500mg.

Table 6: Retailers perception of effectiveness of Paracip 500mg

	Effectiveness		Total	Effectiveness	
	Yes	No		Yes (%)	No (%)
Branded					
Yes	38	10	48	79	21
No	0	9	9	0	100
Total	38	19	57	67	33

Source: Retailer’s Survey 2010

Out of 48 retailers sell branded generics, out of these 48 retailers, about 39 reported the quality Fenak Plus to be same as

Oxalgin. This means about 81% of the retailer on the basis of their experience reported effectiveness of Fenak Plus.

Table 7: Retailers perception of effectiveness of Fenak Plus

	Effectiveness		Total	Effectiveness (%)	
	Yes	No		Yes (%)	No (%)
Branded					
Yes	39	9	48	81	19
No	0	9	9	0	100
Total	39	18	57	68	32

Source: Retailer’s Survey 2010

Out of 48 retailers who sell branded generics, about 44 reported the quality of Omnigel to be same as Volini Gel. This means about 92% of the retailer on the

basis of their experience reported effectiveness of Omnigel as compared to Volinigel.

Table 8: Retailers perception of effectiveness of branded Diclofenac Sodium gel

	Effectiveness		Total	Effectiveness	
	Yes	No		Yes (%)	No (%)
Branded					
Yes	44	4	48	92	8
No	0	9	9	0	100
Total	44	13	57	77	23

Source: Retailer’s Survey 2010

## Conclusion

The paper suggests that a generic version of the medicine in terms of effectiveness is comparable to their branded counterparts. The review of the some paper based on experimental research suggests that generic medicines are as effective as branded medicines, with the exception of few studies. The paper also noted the perception of the retailers about generic medicines. The survey result suggests that about 76 percent of the retailer traded in generic medicines. The majority of the retailer's reported the effectiveness of generic version of medicine as compared to the branded medicines.

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