

# The “Achilles Heel” of the International Nonproprietary Names (INN) Programme. In Hypertensive Patients of Mexico’s Rural Population

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**Abstract** Problem: In Mexico many public health programs, have been designed to give attention in rural populations. Not even the most effective program will work, if the patient does not take their prescribed medication properly. Patient compliance can be defined a taking medication as prescribed. The INN is very effective among health care professionals, but for patients in Mexico represents an obstacle to identify and remember their treatment. Nearly 80% of the patients in rural communities in Mexico ignore the name of their treatment. In Mexico 97% of hypertense patients are interested in remembering the name of their treatment [1]. 65% considered that the name of the drug in INN nomenclature is too complex to remember [1]. 90% of them suggested that if their drug had a simple symbol or nomenclature they could remember their treatment [1]. This could mean that INN could be an obstacle to treatment adherence, and could increase their costs. Suggested Solution: An additional symbol nomenclature: animals, fruits or geometrical figures. An equivalent of INN with symbolic figure in the drug box and in the tablet or capsule, could simplify INN for the patients. With this the hypertensive patients could identify their treatment, this could improve treatment adherence, decrease treatment switching phenomenon.

**Keywords** Drug nomenclature, International Nonproprietary Names, Hypertensive Patients

## 1. Introduction and Problem Statement

In Mexico many public health programs, have been designed to give attention in rural populations. Unfortunately even the most effective program will work, if the patient does not take their prescribed medication properly. Patient compliance can be defined a taking medication as prescribed. In literature risk factors have been identified for poor patient adherence to treatment. Polypharmacy, inverse relationship between medication adherence and the number of prescribed daily doses, medication unavailable, ignoring the name of the drug among others [1-4]. Good adherence regimens have been achieved with patient education, informing about complications, when antihypertensive therapy fails [2]. It is well established that a strong relationship between patient and physician is the best strategy to good adherence to therapy.

The International Nonproprietary Names (INN) Programme is a universal drug nomenclature. The main objective is that each substance would be recognized by a unique name among health professionals [5]. The INN is very effective among health care professionals, but for patients in Mexico, is impossible to identify and remember.

Nearly 80% of the patients in rural communities in Mexico ignore the name of their treatment [1]. Resulting in a constant change of drug therapies among them by the first contact medical doctors. The constant drug switching phenomenon decreases the therapy success, and increases costs [6, 7]. Patients with poor treatment compliance are at an increased risk of hospitalization emergency care center visits and complications [8]. The Odds Ratio for hospitalization and emergency care center visits are 1.31 and 1.45 respectively in the poor treatment compliance patients [8].

Problems with the INN, have been described in literature. Confusion between look-alike and sound-alike (LASA) medication names had proven a threat to patient safety. Similarity and complexity in the INN nomenclature had revealed, the necessity of an alternative simple nomenclature, to avoid this LASA phenomena [8].

In Mexico 31.5% of the adult population has high blood pressure [1]. In rural populations 70% are non-adherent to their treatment [1]. The public costs of an hypertensive-diabetic is around \$3,500 Mexican pesos per year [9-12]. In other countries in development like Cuba cost is around \$4,800 Mexican pesos per year [13]. When hypertensive treatment is interrupted, the cost of treating complications increases dramatically. Resulting in increased hospital admissions with corresponding augmented expenses [9-13].

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Published online at <http://journal.sapub.org/phr>

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## 2. Suggested Solution

We suggest an additional symbol nomenclature: animals, fruits or geometrical figures. An equivalent of INN with symbolic figure in the drug box and in the tablet or capsule. (Figure 1). With this the hypertensive patients could identify their treatment, this could improve treatment adherence, decrease treatment switching phenomenon. Prospective randomized comparative studies should be developed to corroborate this hypothesis. Unfortunately in this moment in my institution we don’t have de economic resources to develop this studies. Another advantage with this alternative nomenclature, LASSA phenomena could be solved indirectly, with this symbolic representation of the medication. Randomized trials, and pilot studies are needed to prove this alternative nomenclature effective.



**Figure 1.** Drug Box with the trade name of the drug, the international nonproprietary name and a symbolic equivalent. In this case the symbol of a monkey

## REFERENCES

- [1] Rendón-Medina MA, Avila-Lopez N, Becerril-Ayala A, Guerrero-Loza E, Rodriguez-Weber F. Ignoring medical treatment as a risk factor for negative adherence to treatment in patients with arterial high blood pressure in rural populations | Desconocimiento del nombre del medicamento como factor de riesgo relativo de incumplimiento del tratamient. *Med Interna Mex.* 2014; 30(3): 240-246.
- [2] Ghembaza MA, Senoussaoui Y, Tani MK, Meguenni K. Impact of Patient Knowledge of Hypertension Complications on Adherence to Antihypertensive Therapy. 2014: 41-48.
- [3] Claxton AJ, Cramer J, Pierce C, A B. A Systematic Review of the Associations Between Dose Regimens and Medication Compliance. 2001; 23(8).
- [4] Lulebo AM, Mutombo PB, Mapatano MA, et al. Predictors of non - adherence to antihypertensive medication in Kinshasa , Democratic Republic of Congo: a cross - sectional study. *BMC Res Notes.* 2015;1-8. doi:10.1186/s13104-015-1519-8.
- [5] Kopp-Kubel S. International Nonproprietary Names (INN) for pharmaceutical substances. *Bull World Health Organ.* 1995; 73(3): 275-279. doi:10.1097/00000441-196405000-00034.
- [6] Mazzaglia G, Mantovani LG, Sturkenboom MCJM, et al. Patterns of persistence with antihypertensive medications in newly diagnosed hypertensive patients in Italy: a retrospective cohort study in primary care. *J Hypertens.* 2005; 23(11): 2093-2100. doi:10.1097/01.hjh.0000186832.41125.8a.
- [7] Bryan R, Aronson JK, Hacken P, Williams A, Jordan S. Patient Safety in Medication Nomenclature: Orthographic and Semantic Properties of International Nonproprietary Names. 2015:1-16. doi:10.1371/journal.pone.0145431.
- [8] Kim H, Moon K, Park T, Park S, Yoon S. Factors affecting treatment compliance in new hypertensive patients in Korea. *Clin Exp Hypertens.* 2017;38(8):701-709. doi:10.1080/10641963.2016.1200599.
- [9] Adela J, Estrada F. Costo del tratamiento antihipertensivo en ancianos ingresados en los servicios de Geriatria y Medicina Interna. *Medisan* 2011; 15(1): 67. 2011; 15(1):67-72.
- [10] Cardinal H, Monfared AA, Dorais M, LeLorier J. A comparison between persistence to therapy in ALLHAT and in everyday clinical practice: a generalizability issue. *Can J Cardiol* 2004; 20:417–421.
- [11] Villarreal Ríos E, Campos Esparza M, Romero Islas NR, Garza Elizondo ME, Martínez González L, Cortés Núñez AR. Coste de la atención al paciente diabético-hipertenso en el primer nivel de atención. *Atención Primaria.* 2006; 38(10): 537-542. doi:10.1157/13095921.
- [12] Villarreal-Ríos E, Mathew-Quiroz A, Garza-Elizondo ME, Núñez-Rocha G, Salinas-Martínez AM, Gallegos-Handal M. Costo de la atención de la hipertensión arterial y su impacto en el presupuesto destinado a la salud en México. *Salud Publica Mex.* 2002; 44(1). doi:10.1590/S0036-36342002000100001.
- [13] McCombs JS, Nichol MB, Newman CM, Sclar DA. The costs of interrupting antihypertensive drug therapy in Medicaid population. *Med Care.* 1994 Mar; 32(3): 214-226.