

The Value of Treatment Acceptability in the Geriatric Population, Review of a French Study Group

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***Corresponding author:** Vincent Boudy, Unité de R&D Galénique, Agence Générale des Equipements et Produits de Santé (AGEPS), France

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Agathe Thouvenin¹, Arnaud Schweitzer Chaput¹, Shaya Sable¹, Kévin Petitcolas¹, Balthazar Toussaint^{1,2} and Vincent Boudy^{1,3*}

¹Unité de R&D Galénique, Agence Générale des Equipements et Produits de Santé (AGEPS), France

²Université Paris Saclay, CNRS, Institut Galien Paris Sud, France

³Chemical and Biological Technologies for Health Laboratory, France

Abstract

The acceptability of treatments is of major importance in the management of patients. Poor acceptability can lead to poor adherence, discomfort and reduced efficacy if treatment alteration is needed. Treatment acceptability is a key issue in the pediatric population, but is often overlooked in the geriatric population, although there are many similarities between the two populations. For this purpose, collaboration has been initiated among health professionals involved in the care of geriatric patients from 23 hospital pharmacists, 15 geriatric doctors and other actors involved in the care of geriatric patients, and Clinsearch®, a clinical research organization, in order to develop and validate a multivariate approach for the determination of acceptability in geriatric population. Using this approach, several parameters were identified as decreasing the acceptability of solid and liquid oral forms, such as tablet size or lack of flavor in liquid forms. In conclusion, as the acceptability of treatments is a complex set of parameters, the use of multivariate approach is essential. Furthermore, acceptability evaluation during development of treatments is essential, although too often overlooked.

Keywords: Medicine acceptability; Geriatric population; Drug formulation

Abbreviations: EMA: European Medicines Agency; DIP: Pharmaceutical Innovation Department; EP-HP: Pharmaceutical Establishment-Hospitals of Paris; AGEPS: General Agency for Health Products and Equipment

Mini Review

Patient acceptability in the older population has been recently defined by the European Medicines Agency (EMA) as “the ability and willingness of the patient to self-administer and also any of their lay or professional caregivers, to administer the medicinal product as intended”. Medicine acceptability has a significant impact on patient adherence in older population and consequently on the efficiency and safety of treatments as well as overall quality of life [1,2]. For this purpose, a collaboration was initiated between a group of physicians and pharmacists from several geriatric hospitals and nursing homes, named “galenic and geriatric meeting”, and Clinsearch®, a clinical research organization, in order to develop and validate a multivariate approach for the determination of acceptability in geriatric population. It was created in November 2015 by the Pharmaceutical Innovation Department (DIP) of the Pharmaceutical Establishment-Hospitals of Paris (EP-HP) of the General Agency for Health Products and Equipment (AGEPS). Now managed by the DIP, it is composed of 3 galenists (EP-HP, AGEPS), 23 hospital pharmacists, 15 geriatric doctors and other actors involved in the care of geriatric patients.

Using this approach, several studies have been conducted on the acceptability of different dosage forms such as oral liquid or tablets pharmaceuticals products [3-6]. Concerning oral liquid formulation, these studies demonstrated the “positive” acceptability of oral liquid form in older population without swallowing disorders, in contrast to those with swallowing disorders. However, while oral liquid form has always been used as an alternative to solid oral dosage forms in patients with swallowing disorders, the most appropriate form with the best acceptance might in fact be or dispersible tablets. The use of liquid formulation for patient with swallowing disorders is not always the optimal solution. Indeed, there is a high risk of aspiration in the hypopharynx due to their lack of resistance to flow. To prevent this phenomenon, increasing the viscosity can help slowing the oropharyngeal transit and the premature emptying from the mouth. Furthermore, the acceptability study also revealed the importance of palatability investigation. Addition of a flavoring agent is an interesting point to consider when developing or prescribing an oral solution. Indeed, formulations with flavoring agent were more accepted than without, especially among older women, and formulations without flavoring agent were accepted by older men, but not by older women. This emphasizes the need for flavoring and palatability studies in the development process of oral liquid formulations. Despite being a major point of interest = in pediatric populations, it is often overlooked in geriatric populations [5,7].

In the case of tablets, numerous factors can affect the swallowability and thus the acceptability of tablets. Among them, we can mention the shape, the density, the surface characteristics and the size. In this context, a study was conducted in order to determine the impact of tablet size on acceptability. Thus, when considering the whole geriatric population, tablets were classified as “positively accepted”. However, the presence of swallowing alteration can affect the acceptability of tablets in particular for the largest tablets. Tablets smaller than 6.5mm were well accepted by patients with swallowing disorders; larger tablets were significantly more often altered. Alterations of dosage forms prior to administration, such as capsule opening or tablet crushing/splitting could change the pharmacokinetics and/or pharmacodynamics of the product altering the efficiency of the treatment or inducing toxicity. In this regard, if such alterations are needed, they should be prescribed by the physician or at the very least the physician should be informed of these changes. Other factors such as the presence coating are also important in acceptability because they can affect swallowability, by modifying smoothness, stickiness, slippery aspect and palatability. Older people preferred the coated tablets rather than the uncoated tablet. Furthermore, visual aspects (color and shape) can be interesting not only to improve acceptability, but also to improve treatment adherence by enhancing recognition and

differentiation among the different treatments used by patients [4,8]. Finally, the packaging and delivery device are also interesting elements to consider. Indeed, the majority of studies concerning acceptability are conducted in hospitals or nursing homes, in which caregivers usually prepare treatments. However, the manipulations of packaging or delivery device can be difficult for older people, who present articular or musculoskeletal disorders, and thus affect the acceptability and treatment adherence.

Conclusion

In conclusion, this working group made it possible to promote exchanges between the various health professionals and to propose areas of improvement for galenic presentations with the aim of improving the acceptability of treatments in geriatrics. Indeed, acceptability evaluations ensure that formulations are suitably designed and acceptable for end-users, in order to reduce inappropriate uses of dosage forms. Thus, this acceptability evaluation leads to safer and effective use of medicines. It is an element that should be taken into account in the patient care, although it is often neglected, and should be evaluated individually according to the characteristics of each patient.

References

1. Drumond N, Nales DAR, Çarkit FK, Stegemann S (2017) Patients' appropriateness, acceptability, usability and preferences for pharmaceutical preparations: Results from a literature review on clinical evidence. *Int J Pharm* 521(1-2): 294-305.
2. Liu F, Ghaffur A, Bains J, Hamdy S (2016) Acceptability of oral solid medicines in older adults with and without dysphagia: A nested pilot validation questionnaire based observational study. *Int J Pharm* 512(2): 374-381.
3. Vallet T, Belissa E, Caget SL, Chevallier A, Chedhomme FX, et al. (2018) A decision support tool facilitating medicine design for optimal acceptability in the older population. *Pharm Res* 35(7): 136.
4. Vallet T, Michelon H, Orlu M, Jani Y, Leglise P, et al. (2020) Acceptability in the older population: The importance of an appropriate tablet size. *Pharmaceutics* 12(8): 746.
5. Belissa E, Vallet T, Caget SL, Chevallier A, Chedhomme FX, et al. (2019) Acceptability of oral liquid pharmaceutical products in older adults: palatability and swallowability issues. *BMC Geriatr* 19(1): 344.
6. Ruiz F, Vallet T, Wojcicki AD, Belissa É, Fontan JE, et al. (2019) Dosage form suitability in vulnerable populations: A focus on paracetamol acceptability from infants to centenarians. *PloS One* 14(8): e0221261.
7. Liu F, Ranmal S, Batchelor HK, Gul MO, Ernest TB, et al. (2014) Patient-centred pharmaceutical design to improve acceptability of medicines: similarities and differences in pediatric and geriatric populations. *Drugs* 74(16): 1871-1889.
8. Shariff ZB, Dahmash DT, Kirby DJ, Missaghi S, Siahboomi AR, et al. (2020) Does the formulation of oral solid dosage forms affect acceptance and adherence in older patients? A mixed methods systematic review. *J Am Med Dir Assoc* 21(8): 1015-1023.e8.

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