

A Simplified Review on Isoniazid

Supriya Thite¹, Rutuja Gaikwad², Sidhika Titar³, Sejal Shelke⁴

Students, Samarth Institute of Pharmacy, Belhe, Maharashtra., India^{1,3,4}

Department of Pharmaceutics, Samarth Institute of Pharmacy, Belhe, Maharashtra, India²

supriyathite06@gmail.com

Abstract: Isoniazid is largely effective for the operation of tuberculosis. Still, it can beget liver injury and indeed liver failure. Tuberculosis (TB) remains a global burden and public health concern. Isoniazid, a top antitubercular medicine (ATD) though effectively used in TB preventive chemotherapy is preferentially available in adult phrasings. Its use thus in paediatric population is challenged with issues of high probability of inaccurate cure administration, low case compliance and adherence. This burden may be advanced in resource limited settings; therefore, development of simple child friendly phrasings is needful. This study aimed to design, develop and estimate an unconsidered formulary model of a paediatric oral dispersible isoniazid tablet for use in a resource-limited setting. Paediatric oral dispersible isoniazid granulation batches with varying attention (0.5-5.5 w/w) of sodium carboxyl methyl cellulose as super disintegrant were prepared by wet granulation system and compressed. Granulation batches were subordinated to pre and post contraction evaluation independently in agreement with established standard styles results were statistically analysed using one way analysis of friction (ANOVA) with significance set at $p < 0.5$.

Keywords: Paediatric Tuberculosis, Isoniazid, Dispersible Tablet, Extemporaneous Compounding

REFERENCES

- [1]. Azubuike, C. P., Rodriguez, H, Okhamafe, A. O., Rogers, R.D. (2012). Physicochemical properties of maize cob cellulose powders reconstituted from ionic liquid solution. *Cellulose*. 19:425-433.
- [2]. British Pharmacopoeia Commission. (2013). British Pharmacopoeia, 13th Edition, Stationery Office, Great Britain, Basu, B., Bagadiya, A, Makwana, S, Vipul, V., Batt, D, Dharamsi, A. Formulation and evaluation of fast dissolving tablets of cinnarizine using superdisintegrant blends and subliming material. *J Adv Pharm Technol Res*. 2011; 2 (4):266–273. doi:10.4103/2231-4040.90885
- [3]. Bolton, S., Bon, C., (2004). Pharmaceutical statistics and practical and clinical application. In: Rev and Expanded, 4th ed. Marcel Dekker Inc., New York, pp. 96–146.
- [4]. Chein, Y.W. 1992. Oral drug delivery and delivery systems. 2nd Ed. New York: Marcel Dekker: 139-196.
- [5]. Donald, P.R. (2007). The assessment of new anti-tuberculosis drugs for a paediatric indication. *Int J Tuberc lung Dis* 11: 1162–1165.
- [6]. Enarson, P.M., Enarson, D.A. and Gie, R. (2005) Management of the child with cough or difficult breathing. *Int J Tuberc lung Dis* 9: 727–732
- [7]. European Medicines Agency. (2013). Revised priority list for studies into off-patent paediatric medicinal products. EMA/98717/2012, Available at: www.ema.europa.eu/docs/en_GB/document_library/Other/2009/10/WC500004017.pdf. Accessed August 15, 2013.
- [8]. Fu, Y., Yang, S., Jeong, S.H., Kimura, S. and Park, K., (2014). Orally fast disintegrating tablets: developments, technologies, taste-masking and clinical studies. *Crit. Rev. Ther. Drug. Carrier Syst*. 21 (6):433-76. DOI: 10.1615/Crit Rev Ther Drug Carrier Syst. 21.16.10
- [9]. Furtado, S., Deveswaran, R., Bharath, S., Basavaraj, B.V., Abraham, S. and Madhavan, V. (2009). Development and characterization of Orodispersible tablets of famotidine containing a subliming agent, *Tropical Journal of Pharmaceutical Research*, 8 (2): 153-159.

- [10]. Gohel, M., Patel, M., Amin, A., Agrawal, R., Dave, R. and Bariya, N. (2004). Formulation Design and Optimization of Mouth Dissolve Tablets of Nimesulide Using Vacuum Drying Technique. *AAPS Pharma Science Technology*. 5 (3): 36.
- [11]. Chakraborty S, Rhee KY. Tuberculosis Drug Development: History and Evolution of the Mechanism-Based Paradigm. *Cold Spring Harb Perspect Med*. 2015 Apr 15;5(8):a021147.
- [12]. Blumberg HM, Burman WJ, Chaisson RE, Daley CL, Etkind SC, Friedman LN, Fujiwara P, Grzemska M, Hopewell PC, Iseman MD, Jasmer RM, Koppaka V, Menzies RI, O'Brien RJ, Reves RR, Reichman LB, Simone PM, Starke JR, Vernon AA., American Thoracic Society, Centers for Disease Control and Prevention and the Infectious Diseases Society. American Thoracic Society/Centers for Disease Control and Prevention/Infectious Diseases Society of America: treatment of tuberculosis. *Am J Respir Crit Care Med*. 2003 Feb 15;167(4):603-62.
- [13]. Stettner M, Steinberger D, Hartmann CJ, Pabst T, Konta L, Hartung HP, Kieseier BC. Isoniazid-induced polyneuropathy in a tuberculosis patient - implication for individual risk stratification with genotyping? *Brain Behav*. 2015 Aug;5(8):e00326.
- [14]. Desta Z, Soukhova NV, Flockhart DA. Inhibition of cytochrome P450 (CYP450) isoforms by isoniazid: potent inhibition of CYP2C19 and CYP3A. *Antimicrobe Agents Chemother*. 2001 Feb;45(2):382-92.
- [15]. Shah R, Ankle P, Sinha K, Iyer A, Jayalakshmi TK. Isoniazid Induced Lupus Presenting as Oral Mucosal Ulcers with Pancytopenia. *J Clin Diagn Res*. 2016 Oct;10(10):OD03-OD05.
- [16]. Denholm JT, McBryde ES, Eisen DP, Penington JS, Chen C, Street AC. Adverse effects of isoniazid preventative therapy for latent tuberculosis infection: a prospective cohort study. *Drug Health Patient Saf*. 2014;6:145-9.
- [17]. Metushi I, Uetrecht J, Phillips E. Mechanism of isoniazid-induced hepatotoxicity: then and now. *Br J Clin Pharmacol*. 2016 Jun;81(6):1030-6.
- [18]. Lee CM, Lee SS, Lee JM, Cho HC, Kim WS, Kim HJ, Ha CY, Kim HJ, Kim TH, Jung WT, Lee OJ. Early monitoring for detection of antituberculosis drug-induced hepatotoxicity. *Korean J Intern Med*. 2016 Jan;31(1):65-72.
- [19]. Hamza TH, Houwelingen HC, Stijnen T. The binomial distribution of meta-analysis was preferred to model within-study variability. *J Clin Epidemiol*. 2008; 61: 41-51.
- [20]. Thompson SG, Sharp SJ. Explaining heterogeneity in meta-analysis: a comparison of methods. *Statist Med*. 1999; 18: 2693-2708