

Review on Transdermal Drug Delivery System

Prof. Shirish B. Nagansurkar, Dr. Sanjay K. Bais, Mr. Pradip Daji Shembade

Fabtech College of Pharmacy, Sangola, Solapur, Maharashtra, India

Abstract: *Transdermal drug delivery system is an essential part of novel drug distribution system. The topically administered medications in the form of patches which when applied to the skin deliver the drug. For operative TDDS the drug are easily able to penetrate the skin and easily reach the target site. TDDS avoids the first pass metabolism, less frequency of administration, reduction gastrointestinal side effects. Adverse effects are minimized due to steady and optimum blood concentration. It has greater bioavailability and efficacy of drug. The human skin is multi-layered organ composed of many histological layers. Skin is the largest organ in the body. Its major functions are protection of major or vital internal organs for the external influences, temperature regulations, control of water output and sensation. Polymer should be chemically non-reactive, should not decompose on storage, should be non-toxic, cost should not be high. E.g. - cellulose derivatives, zein, gelatin etc. Backing films play a vital role in the transdermal patch and the role of the film is to protect the active layer. Transdermal patches can be evaluated by interaction studies thickness, weight uniformity, drug content, in vitro study, moisture content, swelling index basic component of TDDS.*

Keywords: TDDS, Peel adhesion, Shear strength

REFERENCES

- [1]. Lincy John. Review on Transdermal Drug Delivery System .International Journal of Pharma Research and Health Sciences.
- [2]. Dr. ritesh bathe, Audumbar Mali. An updated review on transdermal drug delivery systems. International Journal of Advances in Scientific Research.
- [3]. Dr.ritesh bathe, Audumbar Mali .A Comprehensive Review on:Transdermal drug delivery systems.International Journal of Biomedical and Advance Research.
- [4]. Dipen Patel, Sunita A. Chaudhary, Bhavesh Parmar, Nikunj Bhura.Transdermal Drug Delivery System: A Review. The pharma innovation.Online Available at www.thepharmajournal.com
- [5]. Satinder Kakar, Ramandeep Singh, Pooja Rani. A Review on Transdermal Drug Delivery. Vol 3, Issue 4, 2016.
- [6]. Ankush Rana1, Varunjot Kaurand Shreya Kaushal. A Review on Transdermal Drug Delivery System. World Journal of Pharmaceutical Research.
- [7]. Zachary Brooks, Tushar Goswami, Amy Neidhard-Doll, Tarun Goswami. Transdermal drug delivery systems: Analysis of adhesion failure
- [8]. Preetam Bala, Sonali Jathar, Sangeeta Kale, Kavita Pal. Transdermal Drug Delivery System (TDDS) - A Multifaceted Approach For Drug Delivery. Preetam Bala et al. / Journal of Pharmacy Research 2014,8(12),1805-1835.
- [9]. Jain.N.K, Controlled and novel drug delivery: Transdermal drug delivery system novel method
- [10]. New Delhi: CBS publishers and distributors; 1997. P.428-430.
- [11]. Mitragotri S, Blankschtein D, Langer R. Transdermal drug delivery using low-frequency sonophoresis: Pharm. Res. 1996 oct-dec; 13(3): 411-420.
- [12]. Aulton.M.E, Pharmaceutics; The science of dosage form design. 2nd ed, Harcourt publishers; Churchill Livingstone; 2002. p. 398-411.
- [13]. Ansel.H.C, Loyd.A.V, Popovich.N.G, Pharmaceutical dosage forms and drug delivery systems: transdermal drug delivery system. 7th ed. Lippincott Williams and Willkins publication. p. 298-313.
- [14]. Jain N. K, Jain S. K. Controlled and Novel Drug Delivery: New delhi: CBS Publishers and Distributors; 2002. p.107-110.

- [15]. Chien, YW. Novel drug delivery systems, *Drugs and the Pharmaceutical Sciences*: New York: Marcel Dekker; 1992. p.797-799.
- [16]. Jalwal P, Jangra I A, Dahiya L, Sangwan Y, Saroha R. A Review on Transdermal Patches: *The Pharm. Res.* 2010; 3(2): 139-149.
- [17]. Govil S.K, Tyle P. *Drug Delivery: Fundamentals and Application*. 2nd Ed. New York: Marcel Dekker; 1998: 385-406. Jayaswal, S.B, Sood R. Transdermal patches of Ketotifen fumarate: *The East. Pharm.* 1987 Jan; 30(35): 47-50.
- [18]. Hadgraft J, Guy R. H. *Transdermal Drug Delivery*. 2nd ed. New York: Marcel Dekker, 35. p.14-16.
- [19]. Barry BW “Dermatological Formulations: Percutaneous Absorption”, *Drugs and pharmaceutical sciences*, Volume – 18, Marcel Dekker, Inc. 1983:1-39.
- [20]. ME, *Pharmaceutics: The Science of Dosage Form Design*, Second Edition, Part Four, Dosage Form Design and Manufacture, Chapter 33, “Transdermal Drug Delivery” 2007: 499 – 533. Merkle, H.P., Transdermal delivery system: *Methods find, Expclinpharmacol*, 1989: 11; 135-
- [21]. Levin G, Kornfeld J, Patel Y R, Damon S. Transdermal Delivery Success Through A Deep Understanding Of The Skin Corium. [internet]. 2007 Available from: URL: [http:// www.ondrugdelivery.com](http://www.ondrugdelivery.com)
- [22]. Shah S. Transdermal Drug Delivery Technology Revisited Recent advances: *Pharm info net*. 2008 march; 6(5): 98-106.
- [23]. Joseph S D. Transdermal Patches: An Innovative Drug Delivery System That Has Raised Serious Safety Concerns. *NewsInferno*. [internet]. 2006 [cited 2011 feb 22]. Available from: URL: <http://www.newsinferno.com>.
- [24]. Morrow T. Transdermal Patches Are More Than Skin Deep. *Managed care*. [internet]2004 [cited 2011 feb4]. Available online: URL <http://www.managedcaremag.com>.
- [25]. Aggarwal S, Priya M. Permeation Studies of Atenolol and Metoprolol Tartrate from Three Different Matrices for Transdermal Delivery: *Indian. J. Pharm. Sci.* 2007 June; 69(4): 535-539.
- [26]. Chandrashekhra N S. Current Status and Future Prospects in Transdermal Drug Delivery. *Pharmainfo.net*. 2008.
- [27]. Hemangi .J, Jitendra S, Desai .B, Keyur.D. Design and evaluation of Amlodipine besilate transdermal patches containing film former: *ijprd*. 2009 sept; 7(001): 1- 12.
- [28]. Jadhav.R.T, Gattani S.G, Surana S.J. Formulation and evaluation of transdermal films of diclofenac sodium: *Int. J. pharm. Tech. res.* 2009 oct-dec; 1(4): 1508-1511.