

Universitas Ngudi Waluyo
Fakultas Ilmu Kesehatan
Program Studi Farmasi
Skripsi, Juli 2020
Pangestika Widiasih
050218A177

PENGARUH PENGGUNAAN BAHAN PENGIKAT POLIVINIL PIROLIDON (PVP) TERHADAP SIFAT FISIK TABLET

(xx + 66 halaman + 18 Tabel + 2 gambar + 6 lampiran)

INTISARI

Latar Belakang: Polivinil pirolidon (PVP) merupakan bahan pengikat tablet yang kompatibel dengan berbagai macam eksipien farmasetis, tidak beracun serta larut dalam pelarut polar dan non polar. PVP telah banyak digunakan dalam berbagai formulasi tablet. Oleh karena itu, dilakukan peninjauan beberapa literatur formulasi tablet dengan bahan pengikat PVP.

Tujuan: Penelitian ini bertujuan untuk mengevaluasi pengaruh PVP terhadap sifat fisik tablet berupa keseragaman bobot, keseragaman ukuran, kekerasan, kerapuhan dan waktu hancur tablet.

Metode: Penelitian berupa *literature review* dengan pendekatan meta analisis terhadap 5 literatur formulasi tablet dengan metode granulasi basah yang menggunakan variasi konsentrasi PVP sebagai bahan pengikat. Kelima literatur kemudian dibandingkan hasil uji sifat fisik tablet dan kesimpulan dari masing-masing literatur penelitian. Selanjutnya diambil kesimpulan sesuai tujuan penelitian yang ditetapkan.

Hasil: Peningkatan konsentrasi PVP mempengaruhi penurunan kadar air dan kompresibilitas serta peningkatan sudut diam granul, sedangkan pada tablet yang dihasilkan mempengaruhi penurunan kekerasan dan kerapuhan serta peningkatan lama waktu hancur tablet. Peningkatan dan penurunan hasil dari setiap parameter uji granul dan tablet tidak linier.

Simpulan : PVP memberi pengaruh terhadap sifat fisik tablet karena bersifat higroskopis dan memiliki karakteristik dalam menghasilkan sifat alir dan daya kompresi yang baik. Karakteristik daya kompresi memberi pengaruh pada waktu hancur, kekerasan, dan keseragaman ukuran tablet. Karakteristik sifat alir mempengaruhi keseragaman bobot tablet. Sifat higroskopis PVP mempengaruhi kerapuhan dan kekerasan tablet.

Kata Kunci: PVP, bahan pengikat, tablet, granulasi basah

Kepustakaan: 40 (1971-2019)

Ngudi Waluyo University
Faculty of Health Sciences
Pharmacy Study Program
Final Project, Juli 2020
Pangestika Widiasih
050218A177

THE EFFECT OF USING POLYVINYL PYROLIDON (PVP) AS A BINDER TO THE PHYSICAL PROPERTIES OF TABLETS

(xx + 66 pages + 18 tables + 2 pictures + 6 appendix)

ABSTRACT

Background: Polyvinyl Pyrolidon (PVP) is a tablet binders which compatible with many pharmaceutical excipient, non-toxic also soluble in polar and non polar solvents. PVP has been widely used in various tablet formulations. Therefore, this research purposed to review some literature of the tablet formulation using PVP as binder.

Objectives: This study aimed to evaluate the effect of PVP on the physical properties of tablet specially in weight uniformity, size uniformity, hardness, friability and disintegration time of tablets.

Method: This literature review used meta analysis approach to the 5 literature of tablet formulations with wet granulation method using a variation of PVP concentrations as a binder. The result and conclusion of 5 literature was compared and then made a general conclusion according to research objective which has established.

Results: The increase of PVP concentrations affected the reduce of water content and compressibility also increased angle of repose of granule, while in tablet physical properties affected the decrease of hardness and friability also increased disintegration time of tablet. The increase and decrease results of granule and tablet evaluation parameters were not linear.

Conclusion: PVP affected the physical properties of the tablet because it is hygroscopic and has characteristic to produce good flow and compression properties. Compression properties affected disintegration time, hardness, and size uniformity of tablet. Flow properties of PVP affected weight uniformity of tablet. Hygroscopic properties of PVP affected friability and hardness of tablets.

Keywords: PVP, binder, tablet, wet granulation

Bibliographies: 40 (1971-2019)