APPLICATION OF CHROMATOGRAPHIC AND SPECTROPHOTOMETRIC METHODS FOR THE ANALYSIS OF SELECTED ANTIHYPERTENSIVE COMBINATIONS.

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Abstract

ABSTRACT: High performance liquid chromatographic (HPLC) and spectrophotometric methods developed for the simultaneous determination of two antihypertensive mixtures namely(Perindopril, Indapamide) and (Aliskiren , Hydrochlorothiazide) in bulk powder and in tablets dosage form. In the first method, chromatographic separation of Perindopril and Indapamide was achieved on the Econosphere C-18 column (150mm x 4.6mm, 5µm) using a mobile phase system consisting of acetonitrile: 5mM sodium phosphate buffer (pH 7.5) (50:50) at a flow rate of 0.5 mL/min with UV detection at 202 nm. Method validation parameters were found to be acceptable over the concentration ranges of 1-140 µg/mL and 1-40 µg/mL for Perindopril and Indapamide respectively. Regarding the spectrophotometric methods , two methods were employed, Ratio Subtraction and First Derivative methods. In Ratio Subtraction method, absorbance readings are taken at two wavelengths 277.48 nm (λmax of Aliskiren) and 315 nm (extended spectrum of Hydrochlorothiazide) in methanol. In First Derivative method, absorbance readings are taken at two wavelengths 237.2 nm (for Aliskiren) and 275.8 nm (for Hydrochlorothiazide) in methanol. The applied spectrophotometric methods were found to be rapid, specific, precise and accurate over the concentration range of 5 – 150 µg/mL and 1 – 41 µg/mL for Aliskiren and Hydrochlorothiazide respectively.
Keywords: High performance liquid chromatography; Ratio Subtraction; First Derivative; Perindopril; Indapamide; Aliskerin; Hydrochlorothiazide.
Abbreviation: Aliskiren (ALK); Hydrochlorothiazide (HCT); Perindopril (PER); Indapamide (IND).

- *2013, January*