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Development and validation of HPTLC method for estimation of alogliptin benzoate in bulk drugs and tablet dosage forms

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A new, simple, precise, accurate and selective high performance thin-layer chromatographic method has been developed and validated for the estimation of alogliptin benzoate in bulk and tablet dosage form. Chromatographic separation was carried out on Merck HPTLC aluminium sheets of silica gel 60F254 using acetonitrile: 1% ammonium acetate in methanol (4.5:5.5 v/v) as mobile phase followed by densitometry analysis at 277 nm. The reliability of the method was assessed by evaluation of linearity (500-5000 ng/spot for alogliptin benzoate). The accuracy of method was assessed by recovery studies and was found to be within range of 98-102%. The developed method was validated with respect to linearity, accuracy (recovery), and precision. The results were validated statistically as per ICH Q2 R1 guidelines and were found to be satisfactory. Due to non-availability of product, 400 mg tablets were punched containing 34 mg alogliptin benzoate. The proposed method was successfully applied for the determination of alogliptin benzoate in the tablet dosage form.

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An underlying diagnosis of osteoarthritis is associated with better outcomes after total hip arthroplasty than avascular necrosis of bone

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Our study objective was to examine whether Avascular Necrosis (AVN) as an underlying diagnosis was associated with a higher adjusted risk of complications and readmissions after primary Total Hip Arthroplasty (THA), compared to Osteoarthritis (OA). We analyzed prospectively collected data from a Total Joint Replacement Registry of adults with AVN vs. OA undergoing unilateral primary THA during 2001-2012. We examined mortality (90-day), revision (ever), deep (1 year) and superficial (30-day) Surgical Site Infection (SSI), venous thromboembolism (VTE, 90-day), and unplanned readmission (90-day). Age, gender, race, body mass index, American Society of Anesthesiologists class, and diabetes prevalence were evaluated as confounders. Logistic and Cox regression models were fit with variables significant in univariate models for each outcome. Odds Ratios (OR) and hazard ratios with 95% Confidence Intervals (CI) were calculated. Of the 47,523 primary THA cases, 45,252 (95.2%) had OA, and 2,271 (4.8%) had AVN. Compared to the OA cohort, the AVN patient cohort was younger (55 vs. 67 years), more male (57.5% vs. 41.7%), and less White (59.8% vs. 77.4%). Compared to the OA cohort, the AVN cohort had higher crude incidence of 90-day mortality (0.7% vs. 0.3%), revision (3.1% vs. 2.4%), SSI (1.2% vs. 0.8%), and unplanned readmission (9.6% vs. 5.2%). After multivariable-adjustment for significant factors, AVN patients had a higher likelihood of mortality (OR:2.48; 95% CI:1.31-4.72), SSI (OR:1.67, 95%CI:1.11-2.51), and unplanned readmissions (OR:2.20; 95% CI:1.67-2.91) than OA patients. Detailed discussion with AVN patients regarding the risk of complications is needed during the informed consent.

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