

identified. Among them, the appointment of NSAIDs (diclofenac and ketorolac – 10 cases) was noted, which in this category of patients significantly increases the likelihood of developing gastropathy. Metoclopramide was used in 8 patients, although it is classified as undesirable for elderly patients due to very likely side effects from the central nervous system (parkinsonism, dyskinesia). Amiodarone, which was used in 6 patients, gives a high risk of developing severe bradycardia up to a stop of the sinus node. Some other antiarrhythmics also have similar age restrictions: dronedarone, procainamide, propafenone, quinidine, sotalol. However, it is precisely amiodarone in the elderly that tends to cause pulmonary toxicity (cough, shortness of breath, pulmonary fibrosis) in 5-17% of patients. Amitriptyline, which was used in 4 elderly patients, has a pronounced anticholinergic effect and due to the effect on α -adrenergic receptors and can cause orthostatic hypotension, as well as excessive sedation. Glibenclamide (4 appointments), thioridazine, nitrofurantoin and reserpine (3 appointments), atropine and promethazine (3 appointments) and some others also had contraindications.

Other cases of irrational administration of medicines that are not directly related to the use of not recommended in elderly patients have also been identified. The frequent use of statins of an early generation (simvastatin, lovastatin, fluvastatin) was noteworthy. Also, in four cases, their doses were overestimated, which increased the risk of developing a typical side effect of this group of medicines - systemic myopathy. In one patient, digoxin (in appropriate doses for the elderly) and verapamil were prescribed together. The latter can increase the concentration of digoxin due to a decrease in both renal and extrarenal clearance. In two patients, clopidogrel was combined with omeprazole, which inhibits the formation of an active metabolite. What reduces or eliminates the antiplatelet effect.

Conclusions. A high frequency of prescribing medicines that are potentially not recommended for elderly patients has been established, which can lead to negative consequences, worsen the quality of life and increase mortality. In the group of patients studied by us, such appointments, according to records in medical histories, were noted in 93.6% of the analyzed medical histories (88 out of 94). The use of medicines that could potentially be avoided in elderly patients (76 cases) or directly contraindicated in this clinical situation (12 cases), an overestimation of the dosage of the preparation (18 cases) and incorrect prescriptions when discharging the patient from the hospital (30 cases) was noted. Based on the results obtained in the study, to increase the rationality of medicine treatment of elderly patients, relevant recommendations have been developed.

BODY COMPOSITION MEASUREMENTS OF HEALTHY VOLUNTEERS PARTICIPATING IN A BIOEQUIVALENCE STUDY OF A GENERIC METFORMIN DRUG

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Introduction. Healthy volunteers in a bioequivalence study have to be within normal body-mass index (BMI). Yet people of similar BMI still can be considerably different in their body composition due to different proportion between fat tissue mass, muscle tissue mass, bone mass, and body water. This, in turn, may interfere with the pharmacokinetic parameters of a studied drug making the whole trial less precise.

Aim. To study variation of the body composition measurements of healthy volunteers participating in a bioequivalence study of a generic metformin drug and assess the possible effect of the measured parameters on pharmacokinetics of metformin.

Materials and methods. Body composition of 26 healthy volunteers was measured by body impedance analysis (BIA) using Tanita MC-780 MA device (Japan). The measured parameters include fat percentage, fat mass, fat-free mass, muscle mass, bone mass, BMI, skeletal muscle mass (SMM), total

body water (TBW) percentage and mass, extracellular water mass (ECW), intracellular water mass (ICW), basal metabolic rate (BMR). The results are represented as mean \pm standard deviation.

Results and discussion.

Age	33.81 \pm 11.16	BMI	24.20 \pm 2.58
Body Weight, kg	72.68 \pm 13.50	SMM, kg	29.85 \pm 7.21
Fat, %	21.90 \pm 5.93	TBW, kg	38.95 \pm 8.24
Fat Mass, kg	15.83 \pm 4.92	TBW, %	53.57 \pm 5.21
Fat-free mass, kg	56.85 \pm 11.73	ECW, kg	16.67 \pm 3.02
Muscle Mass, kg	53.99 \pm 11.18	ICW, kg	22.27 \pm 5.38
Bone Mass, kg	2.85 \pm 0.55	BMR, kJ	7054.58 \pm 1389.41

Since metformin is a very hydrophilic substance, we expect the strongest correlation of its pharmacokinetics with TBW and ECW values.

Conclusions. Since there is considerable variation of the body composition values in the sample, we suggest studying correlation between these values and pharmacokinetics of metformin after obtaining pharmacokinetic data on the healthy volunteers in the trial.

**TYPE 2 DIABETES AND COMPLIANCE TO TREATMENT:
FEATURES IN ZAMBIA PRACTIC**

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Introduction. International organizations like WHO (World Health Organization), and the IDF (International Diabetes Federation) that monitor and track the rate of diseases like diabetes, have classified and identified it as a global epidemic currently affecting roughly 422 million people (2020) worldwide and 15.9 million in Africa (with 3.1% regional prevalence), in people between the ages of 20-80. The WHO has estimated that the number of people living with diabetes will rise to approximately 629 million by the year 2045 (45% increase). However, WHO currently working on ways and measures to reduces the rate and number of people developing diabetes, especially type 2 diabetes by developing programs and mobile application (Diabetes:M, DiaMeter, SiDiary, et al.) that promote to encourage people to eat healthily and exercise regularly. According to the IDF in conjunction with the Ministry of Health of Zambia in the African region, people living with diabetes is estimated at 273800 amongst adults over the age of 18, with a prevalence rate of 3.4%, at least 86% of them have been diagnosed with type2 diabetes. As of 2016, the Ministry of Health of Zambia had put policies, measures and programs in place to enhance physical activity. There was no registry of a new patient with diabetes in Zambia in 2016.

Aim. To evaluate and analyze patients with type 2 diabetes, management and compliance to their medication and diet routine.

Materials and methods. The practical part of this study was done in collaboration with Kitwe Teaching Hospital (endocrinology department) in Zambia. We realized the analysis of 20 medical histories with type 2 diabetes; every patient was an outpatient visiting the hospital.

Results and discussion. The Zambian National Formulary registered and approved two groups of oral hypoglycaemic drugs to be used in Zambia – sulfonylurea derivatives and biguanides. Oral hypoglycaemic drugs are prescribed after an unsuccessful 3-month trial period of diet and exercise; these drugs complement the diet and are in no way a replacement for it.

The following list is an analysis of the results obtained from patient’s medical histories. 67 % of patients had moderate cases of type 2 diabetes, which were treated with drugs from two groups. 33 % of