

monotherapy (prostaglandin analogues). A therapeutic of beta-blockers and prostaglandin analogues was detected.

The greatest use of ophthalmological preparations (2015–2017) corresponded with lubricants, tobramycin-dexamethasone, tobramycin, diclofenac and latanoprost.

Regarding the medication which required to be taken into account with ophthalmological diseases, these were:

1. Anticholinergic drugs which can interact in patients with acute angle-closure glaucoma: hyoscine, tolterodine, tricyclic antidepressant, typical antipsychotic, hydroxyzine. Topiramate can produce glaucoma.
2. Alpha-1 adrenergic blockers. The discontinuation (or cancellation or suspension) in cataract interventions needs to be evaluated, due to the risk of inter-operative flaccid iris syndrome.

Conclusion Collaboration with the ophthalmologists was found to be useful and guarantees continuing care and an efficient use of the resources, as well as the acquisition of knowledge.

REFERENCES AND/OR ACKNOWLEDGEMENTS

Improvement of pharmacological treatments in nursing homes: medication review by consultant pharmacists *ejhp.bmj.com/content/22/4/207*

No conflict of interest.

4CPS-184 OFF-LABEL USES OF BEVACIZUMAB IN OPHTHALMOLOGY IN A MOROCCAN UNIVERSITY HOSPITAL

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Background Bevacizumab is an anti-vascular endothelial growth factor monoclonal antibody. Its off-label use has increased in the management of a variety of ophthalmology diseases.

Purpose The aim of this study was to analyse the off-label use of bevacizumab, outside of oncology indications, in the department of ophthalmology, in the Specialty Hospital of Rabat.

Material and methods Retrospective observational study including all ophthalmology patients under bevacizumab treatment between January 2017 and August 2018. Collected data were demographic- and treatment-related, the data were gathered from the medical records and from the pharmacy software.

Results Eighty-five patients (68.5% females, average age 62.66 ± 13 years) received intravitreal administration of bevacizumab in hospital (100 mg/4 ml). The dose used was 2.5 mg (0.1 ml). All of the injections used were off-label.

Off-label indications identified were 65% (64/85) of diabetic macular oedema (DME), 20% (10/85) of age-related macular degeneration (AMD) and 15% (11/85) of macular oedema secondary to retinal vein occlusion (RVO). On average, 5 ± 1.53 injections were used to treat DME, 10 ± 2.15 injections for AMD and 7 ± 3.42 injections for RVO.

The course of the disease was assessed by optical coherence tomography examination, which showed a 75% improvement in patients treated for DME, 60% of patients with OVR and 40% of patients with AMD.

During the study period, 32 vials were used to treat 85 patients (786 injections), on average 25 injections per vial (37.5% of volume lost per vial). Each vial cost € 230. If the

corresponding number of vials had been used, the total cost would have been € 7360.

Cost per patient were € 46 (DME), € 92 (AMD) and € 65 (RVO). Cost per diseases were € 2944 (DME), € 920 (AMD) and € 708 (RVO).

Compared to Lucentis (ranibizumab), has a label use for these pathologies. The cost differences are significant at about € 6 per injection for Avastin and € 800 per injection for Lucentis.

Conclusion The off-label use of bevacizumab appears to be useful as a salvage treatment for ocular diseases. The high economic impact makes it necessary to rationalise bevacizumab prescription and to prepare a pre-filled syringe in the pharmacy to prevent loss of volume and to reduce the risk of infection.

REFERENCES AND/OR ACKNOWLEDGEMENTS

No conflict of interest.

4CPS-185 THE EFFECTIVENESS OF ENZYME REPLACEMENT THERAPY IN THE MANAGEMENT OF GAUCHER DISEASE

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Background Gaucher disease is a rare genetic disorder, due to a deficiency of glucocerebrosidase activity. It is most often manifested by hepatosplenomegaly, haematological and biochemical disorder. First-line treatment is based on enzyme replacement therapy (ERT).

Purpose To evaluate the tolerance and effectiveness of ERT in children with type 1 Gaucher disease.

Material and methods We report the case of four patients with type 1 Gaucher disease treated with ERT (once every 15 days) at the neuro-metabolic diseases unit of our hospital. The evaluation was performed on the basis of primary effectiveness variables (haemoglobin concentration, platelet count, liver parameters) and the reporting of adverse events.

Results There were three girls and one boy, whose clinical signs were manifested by hepatosplenomegaly and haematological disorder in all patients.

Patient 1: 9-year-old girl, early diagnosis, 1 year of treatment with imiglucerase, 5 months of interruption and resumption of ERT.

Parameter	Before ERT	During ERT	% change of parameters
Haemoglobin (g/dl)	10.7	13	+21%
Platelets x109/l	95	195	+105%
AST	49	24	-51%
ALT	24	19	-20%

Patient 2: 17-year-old girl, 10 months of treatment with imiglucerase.

Parameter	Before ERT	During ERT	% change of parameters
Haemoglobin (g/dl)	8.5	10.6	+25%
Platelets x109/l	41	391	+800%
AST	22	19	-13%
ALT	6	6	0%

Patient 3: 3-year-old girl, early diagnosis, 1 month of imiglucerase treatment.

Parameter	Before ERT	During ERT	% change of parameters
Haemoglobin (g/dl)	3.2	5.1	+59%
Platelets x109/l	85	63	-25%
AST	70	73	+4%
ALT	48	32	-33%

Patient 4: 11-year-old boy, delayed diagnosis, 11 months of treatment with taliglucerase, after 1 year interruption of ERT.

Parameter	Before ERT	During ERT	% change of parameters
Haemoglobin (g/dl)	11.4	12.6	+10%
Platelets x109/l	127	101	-20
AST/ALT	123/34	-	-
B glucosidase (ukat/kg of prot)	1	-	-

The ERT had generally been well tolerated and no adverse effects were identified.

Conclusion The ERT used by our patients has an acceptable tolerance profile as well as beneficial effects on the parameters related to the disease. These beneficial effects were demonstrated by the effectiveness variables that were kept stable or improved throughout the treatment in children with Gaucher disease.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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No conflict of interest.

4CPS-186

THERAPEUTIC DRUG MONITORING OF TYROSINE KINASE INHIBITORS: KEY TO PERSONALISED MEDICINE IN ONCOLOGY

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Background Tyrosine kinase inhibitors (TKIs) are increasingly used as oral targeted therapies in oncology. However, the oral route leads to a high interindividual pharmacokinetic variability. Thus, in order to improve efficacy and/or reduce toxicity, therapeutic drug monitoring (TDM) can be used to adapt doses and personalise treatments.^{1 2}

Purpose To assess the potential impact of TDM on clinical decisions in patients treated with TKIs.

Material and methods Retrospective study from January to October 2018 including patients treated for solid tumours with TKIs.

Blood samples were collected and analysed to determine TKIs trough plasma concentrations 3 to 15 days after administration depending on the TKI (necessary time to reach targeted steady state).

All patients were initiated at the recommended daily dose of TKIs. Doses were then adjusted based on efficacy, toxicity and TDM outcomes. In case of failure on TKIs, patients were administered a second-line therapy or another TKI.

The evaluated criteria were patients' characteristics, concomitant treatments, patients' plasma exposure, medical decision, tolerance and disease progression.

Results In total, we collected and analysed 73 blood samples, of which 61.6% were an anti-estimated glomerular filtration rate (afatinib, osimertinib, gefitinib, erlotinib), 21.9% anti-CDK4/6 drug (palbociclib) and 16.4% anti-vascular endothelial growth factor drugs (cabozantinib, nintédanib, pazopanib, regorafenib, sunitinib).

Sixty-two per cent (n=45) of the samples were within the therapeutic interval and most patients continued treatment. However, 10 cases were switched: eight because of disease progression and two due to toxicity.

Despite subtherapeutic exposure (26%, n=19), treatment was continued without any dose escalation in nine cases, as the maximum authorised dosage was reached.

On the other hand, suprathreshold exposure (12%, n=9) required dose reduction of the TKI or treatment withdrawal in five cases while the other four had a good tolerance.

TKIs are mostly well tolerated as 12 patients out of 45 reached the 1–2 toxicity grade and only two patients reached the 3–4 toxicity grade.

Four drug-drug interactions have been identified after TDM. TKIs are essentially metabolised by cytochrome P450 enzymes.³

Conclusion This study suggests that TDM could help in daily clinical decisions along with other clinical data. Indeed, TDM helped us to detect suprathreshold exposure and reduce toxicity, uncover drug interactions and optimise patient management to improve clinical outcomes.

REFERENCES AND/OR ACKNOWLEDGEMENTS

1. PMID: 24878063.

2. PMID: 27446421.

3. PMID: 24041628.

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4CPS-187

EVALUATION OF EXIT PRESCRIPTIONS USING COMPUTERISED PROVIDER ORDER-ENTRY SYSTEM FOR OUTPATIENTS

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Background Medication errors are a major source of many risks to patients. The replacement of hand-written orders by the recommended Computerised Provider Order-Entry (CPOE) system¹ makes it possible to issue exit prescriptions more safely. Indeed, outpatients can benefit from pharmaceutical opinions reported during their hospitalisations.

Purpose Outpatients must have a complete record of medication drugs prescribed by the hospital's physicians. To improve patients' clinical care, it is necessary to evaluate the conformity of outpatient medication.

Material and methods We conducted a retrospective study in three hospital departments (digestive surgery, internal medicine, geriatrics) over a 6 month period in order to analyse the conformity and errors in the exit prescription related to CPOE using the software Pharma (Computer Engineering, France) and the Electronic Medical Records (EMR) in AxiGate (Pharmagest, France).

Results One-thousand two-hundred and eighty-nine patients were included, of which 933 (72%) had an exit prescription