P124 Cancelled

P125 Instrumental radiopharmacy – a step in reduction of occupational dose at the department of nuclear medicine

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Abstract - Introduction
Preparing and applicating of radiopharmaceuticals and taking care of patiens at the department of nuclear medicine mean everyday occupational radiation exposure. Using positron emitters, high dose of occupational radiation exposure can be expected.

Abstract - Material and method
The aim of this study is to assess the reduction effect of radiation exposure dose to the nuclar medicine staff by using automation and instrumentation in preparation and application of radiopharmaceutical fludeoxyglucose (18F-FDG). Dosimetric results are evaluated in working groups of radiopharmacists, physicians and non-physician staff.

Abstract - Results and discussion
In a group of radiopharmaceutical staff reduction in ring dosimetry and the whole-body dosimetry are seen. Significant reduction in ring and the whole-body dosimetry in a working group of physicians and reduction in ring and the whole-body dosimetry in a working group of non-physicians are seen as well.

Abstract - Conclusion
The study shows benefit effect of automation and instrumentation in radiopharmacy and nuclear medicine for ring and the whole-body dosimetry for all working groups at the department of nuclear medicine.

P126 PSYCHOLOGICAL IMPACT OF COVID-19 PANDEMIC IN CANCER PATIENTS AT THE INSTITUTE OF SALAH AZAIZ

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Abstract - Introduction
The current Coronavirus disease (COVID-19) pandemic is a highly stressful event that may lead to significant psychological problems, particularly among cancer patients who are immunocompromised, thus at higher risk of contracting COVID-19.
The aim of this study was to measure the level of post-traumatic stress disorder (PTSD), anxiety and depression in cancer patients during the COVID-19 pandemic.

Abstract - Material and method
Prospective and descriptive study was conducted at the medical oncology department of the Salah Azaiz institute during five months, from April to August 2021.
The data collection was done via two questionnaires, one assessed the Event Scale-Revised (IES-R) and the other assessed the Hospital Anxiety and Depression Scale (HADS).
Each patient was requested about this COVID-19 psychological impact during the last week.
The IES-R is a questionnaire measuring a person's subjective reaction after a traumatic event. The HADS is a questionnaire investigating anxiety and depression.

Abstract - Results and discussion
A total of 147 patients was included. The mean age was 46,8 ± 14,4 years, ranging from 18 to 77 years. The male/female sex ratio was equal to 1,2.
The mean IES-R total score was 20,4 ± 15,4, ranging from 0 to 68. The mean IES-R intrusion was 7,9 ± 6,4, ranging from 0 to 26. The mean IES-R avoidance was 8 ± 6,9, ranging from 0 to 30. The mean IES-R hyperarousal was 4,5 ± 4,5, ranging from 0 to 20. 66% of patients had no diagnosis of PTSD, 15% of them had PTSD mild, 4,1% of them had PTSD moderate and 15% of them had PTSD severe.
The mean HADS-General score was 14,6 ± 8,2, ranging from 0 to 39. The mean HADS-Anxiety was 8,1 ± 4,6, ranging from 0 to 21. Anxiety symptoms were normal in 49,7% of patients, borderline abnormal in 17,7% of them and abnormal in 32,7% of them. The mean HADS-Depression was 6,4 ± 4,2, ranging from 0 to 21. Depression symptoms were normal in 63,9% of patients, bordeline abnormal in 20,4% of them and abnormal in 15,6% of them.

Abstract - Conclusion
This study revealed high rates of distress, anxiety and depression in cancer patients during the pandemic. These results contributed to a better understanding of the psychological consequences of a global pandemic in the context of cancer and they highlighted the need to better support this vulnerable population during such a challenging time.

P127 Chemfort® Closed System Transfer Device (CSTD) Extends Practical In-Use Shelf Life to 28 Days After First Puncture of Non-Preserved Single-Use Vials

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Abstract - Introduction
There is an increasing pressure to reduce the drug cost burden and to preserve drugs.
A solution is drug vial optimization which can be accomplished by extending the practical in-use shelf life of a non-preserved drug vial, through the use of closed system transfer devices (CSTDs).
The study conducted aimed to test if the Chemfort® CSTD can be used to maintain microbiological integrity after ten withdrawals from vials containing Tryptic Soy Broth (TSB) growth medium for up to 28 days (rubber stoppers and devices septa wiped with 2-propanol before each step.

Abstract - Material and method
The study was performed by transferring ten 5 mL aliquots of TSB from a vial with an Chemfort® Vial Adaptor to BBraun® 10 mL syringes (SRN) equipped with a Chemfort® Syringe Adaptor Lock on intervals of 2 weeks, incubated for 7 days at 20 - 25°C, 7 additional days at 30 - 35°C, and inspected visually for signs of microbial growth during each of the dual stage incubations.
Following withdrawal of the final samples on day 28, the vial containing the remaining TSB (50 mL) was also incubated for 7 days at 20 - 25°C and then 7 additional days at 30 - 35°C and then examined for microbial growth.

Abstract - Results and discussion
No signs of microbial growth were observed in any of the 3,500 samples in total, withdrawn at days 0 (3 SRNS of 5mL per vial = 1,050 SRNS), 14 (3 SRNS of 5mL per vial = 1,050 SRNS) and 28 (4 SRNS of 5mL per vial = 1,400 SRNS) during the 28-day test periods or in the growth media remaining in the vial after transfers performed in an uncontrolled environment.
The current study's data applies to preparations and manipulations performed under conditions with high levels of bioburden and supports the possibility for maintaining microbiological sterility by using the Chemfort® CSTD, provided that the operating instructions are strictly observed.

Abstract - Conclusion
The results support an extended practical in-use shelf life of 28 days after first puncture and the claim of a sterility integrity over 28 days for non-preserved single-use drug vials with the Chemfort® device.

P128 3D Printing of personalized medicine

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Abstract - Introduction
Based on technology, colloquially also known as "3D printing", the project intends to make drugs quickly available. Due to this patient specific manufacturing strategy the dose can be easily adjusted based on individual genetic predispositions and be influenced by diagnostic measurements reducing drug interactions. The goal of the 3D project is the development of a compact, fast equipment with a precise dosage unit using max. temperatures of 80 °C to avoid degradation of the active ingredients. Cross contamination can be avoided using one way parts in the product flow.

Abstract - Material and method
Characterization of PEG 6000
Viscosity measurement, stability testing by DSC, processibility of the tablets have been performed

Standardization of mixing process
A appropriate mixing process was developed using turbula mixer and an unguator mixer by estimation of content uniformity

3D Printing equipment
A casting maschine of the chocolate industry has been used. They can be dosed by high precision pumps directly into blisters.

Characterization of tablets
All manufactured tablets were tested by the monography solid forms of the Ph. Eur. and USP, crystallographie detection by XPRD

Abstract - Results and discussion
All produced 20 and 40 mg tablet strengths fulfilled the requirements of the pharmacopoeias. The 5 mg strength barely exceeded the limit for disintegration (< 15 min) with 15 min 50 sec. As all dissolution data for this dosage form are within the limits, the reason could be seen in the sticking effect of the tablet in the testing container making the detection of the endpoint very difficult. A max. variation of 0.38 % in the testing of Uniformity of Mass and an AV-factor of 4.8 for testing of Content Uniformity present the high precision of the dosing units. The signals of X-ray power diffraction analysis indicate a crystalline structure of the corticoid.
A closed process from container with starting material, over modular one way dosing parts down to a sealing of the blisters just after filling, qualifies this very fast technology for handling high potent substances as e.g. cytostatics. Processibility of multilayered, liquid filled and gum tablets was successfully tested too.

Abstract - Conclusion
Based on the existing data it could be successfully demonstrated that the manufacturing of patient specific medicine covering all requirements of pharmacopoias can be managed by a casting maschine. As the physical stability of the used API-Polymer mixtures can be controlled, they could be filled into coded cartridges by an external pharma manufacturer and delivered to pharmacies.

P129 Providing oncology pharmacy services during the coronavirus pandemic. French Society for Oncology Pharmacy (Société Française de Pharmacie Oncologique-SFPO) guidelines writing and evaluation

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Abstract - Introduction
In 2020, SARS-COV-2 appeared and the most dramatic pandemic since decades spread over the world. Waiting for vaccines development, cancer patients were at a higher risk of the COVID-19 infection and more likely to be subjects of a higher morbidity and mortality. This was a big challenge for oncology teams that have to treat patients avoiding contamination by SARS-Cov-2. The aim of the current work is to present oncology pharmacy practice guidelines during the COVID-19 pandemic to secure pharmaceutical care of the cancer patients and their evaluation, 6 months later.

Abstract - Material and method
In April 2020, the bureau of the French Society for Oncology Pharmacy proposed these recommendations according to the French High Authority of Health regarding the guidelines for Good Practice, slightly modified according to pandemic crisis situation. These guidelines were elaborated by a working group of 7 experts in oncology pharmacy practice. Furthermore, the guidelines were assessed by 31 independent reviewers. In January 2021, guidelines were then evaluated by 47 independent reviewers through a specific survey.

Abstract - Results and discussion
About guidelines elaboration, 100% of reviewers approved the guidelines and 90% of them suggested some improvements. The final version incorporates the best compromises and consists of 26 recommendations organized in 8 different sections. Six months later, 47 pharmacists, mainly from Cancer Centers (17%), University Teaching Hospitals (19%) and general hospitals (49%) evaluated guidelines. Eighty one percent of them have used them and 77% judged them useful or partially useful. 22 recommendations were applied by at least 60% of pharmacists [62-93] and only 4 were applied by around 40% of reviewers.

Abstract - Conclusion
These guidelines allowed to secure the pharmaceutical management of cancer patients during the COVID-19 pandemic. The most challenged recommendations were linked to external services (i.e. teleworking) or procedure in severe conditions implementation.

P130 Providing oncology pharmacy services to Ukrainian refugees suffering from cancer. Elaboration of the guidelines for pharmaceutical care and information leaflets on dispensing of oral cancer drugs in the Ukrainian language provided by French Society for Oncology Pharmacy (Société Française de Pharmacie Oncologique-SFPO)

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Abstract - Introduction
The invasion of Ukraine by Russia was launched on February 24, 2022. According to the Office of the United Nations High Commissioner for Refugees, more than 5 million Ukrainians have so far fled beyond the Ukrainian borders, mainly towards Eastern, Middle but also to Western Europe. Out of a population of 43.7 million inhabitants, Ukraine counted, in 2020, 162,594 new cases of cancer. Ukrainians suffering from cancer, forced to flee their country, will therefore constitute a humanitarian concern in France and in Europe in the coming months, their treatment has to be continued. The official lan

Abstract - Material and method
In April 2022, the bureau of the French Society for Oncology Pharmacy proposed these recommendations according to the Good Practice guidelines of the French High Authority of Health, taking into account pandemic crisis situation. These guidelines were elaborated by a working group of 7 experts in oncology pharmacy practice. Furthermore, the guidelines were assessed by 24 independent reviewers. Moreover, SFPO decided to provide their ONCOLIEN sheets translated into Ukrainian, Russian and English.

Abstract - Results and discussion
About guidelines elaboration, 100% of reviewers approved the guidelines and 29% of them suggested some improvements. The final version incorporates the best compromises and consists of 11 recommendations organized in 2 sections: principles and practice. The recommendations concern both the terms of financial coverage and the terms of communication with patients who don't speak French. Sixty-six ONCOLIEN leaflets were translated by a professional translator and are freely available in SFPO-ONCOLIEN website.

Abstract - Conclusion
These guidelines, as well as translated, patient leaflets, allow to secure the pharmaceutical management of Ukrainians refugees suffering from cancer in France and Europe.

P131 Immunity vs oncology immunotherapy

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Abstract - Introduction
Treatment with immune-check points inhibitors has changed the natural course of oncological pathologies.
Despite being effective drugs, this is limited in time. One of the options being studied for efficacy loss is a secondary failure, i.e. mediated by the patient's immune system generating anti-antibodies (ADAs). Previous publications have shown that pembrolizumab has the least immunogenic character.

The aim of this study was to analyse the immunogenic profile of pembrolizumab in terms of the ADAs generation in lung cancer patients.

Abstract - Material and method
A three-year, prospective, multicentre study (PANADA trial) about lung cancer patients pembrolizumab treatment.
Patients who had been on treatment for at least 3 months were analysed to tested for the presence of ADAs vs pembrolizumab.
ADAs were analysed by ELISA using the TRITURUS® platform.

Abstract - Results and discussion
The study included 14 patients, 71.4% male with a mean age of 68.5 years (78-49). All were diagnosed with metastatic lung adenocarcinoma. The mean weight of the patients was 78.4 kg (96-54).
All patients were on pembrolizumab treatment at 200 mg every 21 days, and the median treatment cycle was 12 (20-5).
The presence of ADAs was not identified in any of the samples tested.

Abstract - Conclusion
The analysis of the pharmacokinetic characteristics of immune-check points inhibitors, as well as the development of ADAs, is postulated as one of the potential tools to immunotherapy treatment individualization to improve health outcomes.
In our study, we have confirmed that pembrolizumab shows a low immunogenic profile, without detecting ADAs in the study sample.

P132 The application of STIBS in cancer gene therapy, immunoncology, clinical trials and drug production laboratories

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Abstract - Introduction
In recent years different kinds of gene therapy and immunooncology have been employed for cancer. In general the methodologies of genetic engineering and biological assays are expensive, technically complex and biohazard. In all existing strategies limfocytes isolation is the crucial step for personalized medicine development. As a movable, hermetic working chamber in BSL 2/3 environment, STIBS (Spark-Tech Isolation & Biobanking System) automates the intire isolation process, eliminates contamination risk and human errors, saving hands - on time and improving cost effectiveness.

Abstract - Material and method
STIBS technology is based on unique combination of artificial intelligence and advanced robotics. The robot component (R1) is connected to the special biobank (R2). The robot has grasp, screw/unscrew and carry the tubes functions. AI controlled systems, mounted cameras, RFiD, QR and barcode readers enable the automated sample identification, sample collection and full sample live tracking. The automation of waste management and interior sterility provide the BSL2/3 working standards. Friendly interface helps the user in handling protocols. The system underwent biotechnologicall validation.

Abstract - Results and discussion
The common technique to separate limfocytes from the whole blood is density gradient centrifugation. In opposite to STIBS the standard methods are time consuming, dependent on costly personel and laboratory errors. Manual methods require special equipment and a lots of training. The manual, multi-stage procedures to assess yield, viability and functionality of the isolated cells, have been compared with automated methods. The results showed no significant differences for the separated cells. With STIBS 90% hands- on time reduction and better repeatability have been gained. Laboratory activities like pippeting, cell isolation, various bio-assays and cryopreservation are linked to several strategies of cancer gene therapy such as e.g. : pro-drug activating suicide gene therapy, anti-angiogenic gene therapy, gene therapy-based immune modulation, correction of gene defects, genetic manipulation of apoptotic and tumor invasion pathways. STIBS could be successfully used in any of these.

Abstract - Conclusion
Overall, gene therapy is rapidly progressing. The implementation of STIBS, where all procedures are conducted autonomously will be a great support in every R&D or production laboratory. STIBS automates entire process for multiply samples, enabling high-trhoughput and cost reduction, without the need for professional human supervision, personal protection or special infrastructure.

P133 Advancing Oncology Pharmacy Education in South Africa

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Abstract - Introduction
Cancer is on the increase globally and it is important to have a workforce that is prepared for service delivery, especially to patients in resource limited settings. In South Africa, oncology pharmacy training is largely informal, with most learning taking place in the workplace, and most teaching done by peers who were similarly trained. The University of the Witwatersrand has developed the first undergraduate program in the theory and techniques involved in oncology admixing. A survey was undertaken to determine student perception of the program and the application of the skills to practice

Abstract - Material and method
A self-administered Likert like questionnaire using the Research Electronic Data Capture ((REDCap®) instrument hosted by the university was disseminated to current and previous students over three years who participated in the compulsory oncology pharmacy simulation training module. The survey was designed to determine the extent to which participants agreed with a set group of statements related to the simulation. The data was analysed using Statistica (Version 14.0; TIBCO Software Inc.) to calculate the mean values and interquartile range (IQR). Microsoft Excel was used to group data.

Abstract - Results and discussion
Eighty-one participants completed the entire survey, majority of whom were students from the 2020 cohort and students completing their preregistration internship. Participants mostly agreed (>80%) that the orientation to the learning areas, the setting for the simulation, the organization and the time allocated for the activity was satisfactory. Overall, there was agreement that the simulation provided a valuable learning experience, facilitated teamwork, and created an awareness of oncology pharmacy. Apart from technical skills of reconstituting vials and preparing admixtures for intravenous use, batch documentation, waste disposal and the donning and doffing of personal protective equipment, soft skills like teamwork and collaboration also scored favorably. Most importantly, students also acknowledged that the simulation was applicable to the workplace and that it helped them understand the role of the oncology pharmacist (> 90%). Typically, some found the simulation stressful.

Abstract - Conclusion
While not all students may enter the oncology pharmacy environment as a career path, exposing them to the role of the oncology pharmacist at an undergraduate level may increase interest in this field. The formal training they receive is in line with international guidelines and is a stepping stone to standardizing the way oncology pharmacy is practiced in the country.

P134 Cancer treatments: A Vademecum for healthcare professionals

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Abstract - Introduction
"Vademecum di terapia oncologica" is an Italian summary of cancer treatments published in 2010 which, in the last decade, has represented a valuable professional effort and an important landmark for healthcare professionals (HCPs) who worked in the field of antiblastic drugs. Recent breakthroughs in the oncology area such as checkpoint-inhibitors or Car T-cell therapies as well as personalization of treatments, are helping accelerate progress against cancer. For these reasons it was deemed important to update this summary. We present this project used as an educational and training tool.

Abstract - Material and method
SIFaCT (Italian Society for Clinical Pharmacy and Therapeutics) organized a project to introduce young hospital pharmacists in research activities. The organization provided teamwork activities focused on updating the Vademecum. This project has several purposes: to improve the knowledge of young HCPs in the oncology field and to make available an updated, comprehensive and user-friendly document summarizing cancer therapies to institutions. The contents is going to be reviewed by a group of SIFaCT expert oncology pharmacist and oncologists of AIOM (Italian society of medical oncology).

Abstract - Results and discussion
Ten young healthcare professionals were selected and divided into small work groups. Each group received a specific topic to investigate and/or several chapters of the previous version to update (22 chapters in total). In particular, topics to investigates were: tumours characteristics, anticancer therapies (divided by site), pharmacoeconomic and safety aspects, routes of administration, therapeutic strategy, legislation, epidemiology, toxicity and clinical trials. Every group studied the assigned topics through the most recent literature. Compared to the previous version, some contents have remained unchanged, while others have been updated by reviewing the available scientific literature. Some topics, such as oncological immunotherapy, considered the latest innovative frontier in fighting cancer, have been deepened.

Abstract - Conclusion
This project encouraged ten young colleagues to focus their activities on research, in particular on the oncology field, with the purpose to enhance their professional awareness. Scientific societies and university programs should spend more time, resources and strengths in these projects. The vademecum will be a useful tool to healthcare students who approach the field of oncology.

P135 Increasing acceptance of annual in-house training for CMR substances: change from face-to-face to webinar

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Abstract - Introduction
The University Medical Center of the State of Schleswig-Holstein (UKSH) consists of two hospitals (Kiel and Lübeck). Staff members of the UKSH who handle carcinogenic (c), mutagenic (m) or reprotoxic (r) substances (CMR) are required to participate at an annual in-house training that is done orally and workplace-related. It needs to match German legislation of the Ordinance on Hazardous Substances (§14).
Until 2021 the two hospitals have done the training separately. From 2022 on a webinar has been offered for staff members of both hospitals.

Abstract - Material and method
From 2016 to 2021 participants from Kiel were counted and the ratio of participants per training analyzed. Since 2022 the data were analyzed for both hospitals combined.

Abstract - Results and discussion
From 2016 to 2020 the number of trained staff in the hospital in Kiel had a large variation (2016: 22 participants (p), 2017: 65 p, 2018: 22 p, 2019: 35 p, 2020: 76 p), especially when correlated to the single training (t) (e.g. 2019: 17,5 p/t vs 2018: 4,4 p/t). As a consequence of the COVID-19 pandemic the new webinar was initiated for the staff of the hospital in Kiel in 2021 and already 108 p could be counted in 4 webinars (27 p/t). For individual staff members a face-to-face training was still available (12 p). In the first two webinars in 2022, where staff members of both hospitals could register, 91 persons participated. This means a ratio of 45,5 p/t. The next two webinars scheduled for May 2022 have already been booked by 126 staff members.

Abstract - Conclusion
The change from face-to-face training to a webinar increased the acceptance of staff members to undertake the training. As a webinar is independent from the availability of room and distance, more staff members of both hospitals attended the webinars. Both staff members and instructor stayed at their work area or took place from home, as access to the world wide web is sufficent for participating.