ABSTRACT BOOK

9th Summit Tobacco Harm Reduction

Novel products, Research & Policy

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ORAL PRESENTATIONS

BEYOND THE LABEL: NICOTINE CONTENT AND METHYLNICOTINE IN ORAL POUCH PRODUCTS ON THE POLISH MARKET

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OP01

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Background: Oral nicotine pouches remain outside harmonised EU tobacco product regulation, with no EU-wide requirements for compositional verification or consumer claims. Products marketed as nicotine-free may contain nicotine analogues whose pharmacological and toxicological profiles are poorly characterised. We compared declared and measured composition of pouches available on the Polish retail market.

Material and Methods: Oral pouch products (n=13), together with two medicinal nicotine products as comparators, were analysed by gas chromatography–mass spectrometry. Single pouches were extracted ultrasonically with dichloromethane; where this yielded low or non-detectable nicotine, dichloromethane–methanol (1:2) was used. Nicotine was quantified against a nicotine calibration curve, while other detected constituents were identified by NIST library matching. Results were compared with pack declarations and ingredient lists.

Results: Agreement between declared and measured nicotine content was product dependent. Several products showed close correspondence (12.8 mg declared versus 12.83 mg measured; 10.0 versus 10.33). Others differed substantially: 50 mg versus 30.3 mg, and 30 mg versus 23.1 mg per pouch. One product, labelled «NoNic» and stating that it did not contain nicotine causing rapid addiction, listed (S)-2-methyl-5-(1-methyl-2-pyrrolidinyl) pyridine, the systematic name of 6-methylnicotine, as an ingredient. Analysis identified methylnicotine, consistent with this declaration. No nicotine was detected, whereas methylnicotine was detected at 5.0 mg nicotine equivalents per pouch. Detection was solvent-dependent: in one pouch and one medicinal product nicotine was undetectable with dichloromethane but quantifiable with dichloromethane–methanol.

OP01

Conclusions: In this exploratory sample, declared nicotine content did not always correspond to analytical measurements, and a nicotine-exclusion claim was associated with a product containing a nicotine analogue. Future EU regulation should require verified composition, address nicotine-like substances in product definitions and claims, require transparent chemical naming, and establish validated, harmonised procedures for their extraction and quantification.

ABSTRACT BOOK

PRECLINICAL EVALUATION

COMPARATIVE EVALUATION OF CONVENTIONAL CIGARETTE SMOKE AND HEATED TOBACCO PRODUCT AEROSOL ON CORNEAL STRUCTURE AND FUNCTION

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OP02

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Background: Cigarette smoking is a major risk factor for ocular diseases and promotes corneal damage through processes such as oxidative stress and inflammation. Heated tobacco products (HTPs) are combustion-free nicotine delivery alternatives that may have reduced harmful effects. This study compared the impact of conventional cigarette smoke to HTP aerosol on corneal integrity, oxidative stress, inflammation, and wound healing under standardized and clinically relevant exposure conditions.

Material and Methods: Human donor corneal tissues and two *in vitro* models of corneal epithelium were exposed at air-liquid interface to combustion cigarette (1R6F) smoke and IQOS Lumia (TEREA sticks) aerosol using ISO standardized protocols with delivery of comparable nicotine amounts at clinically relevant concentration. Following exposure, on corneal tissue were carried out histopathological (H&R) evaluation, extracellular reactive oxygen species (ROS) measurement, qPCR analysis of inflammatory and oxidative stress related genes, and proteomic analysis (LC-MS). On corneal epithelium cell lines scratch assay was performed to assess functional wound repair.

Results: In human corneal tissue, cigarette smoke caused marked epithelial disruption and extracellular matrix alterations, whereas HTP aerosol did not produce evident structural damage. 1R6F increased significantly ROS levels and induced transcriptional changes consistent to pronounced inflammatory and oxidative response. Conversely, HTP did not induce a comparable ROS increase or transcriptional modulation. Proteomic analysis revealed that cigarette smoke promoted oxidation mainly of extracellular proteins, whereas HTP aerosol led to oxidation primarily of cytoskeletal proteins. Finally, scratch assay showed a significant impairment in corneal epithelium wound closure by 1R6F, while HTP did not affect cellular repair capacity.

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OP02

Conclusions: Across two experimental models and under standardized and clinically relevant exposure conditions, conventional cigarette smoke affected adversely corneal structure and function. In contrast, HTP aerosol had a lower impact on corneal integrity and function and may represent a valuable alternative to conventional cigarettes.

DIFFERENT PRODUCTS, DISTINCT IMMUNE RESPONSES: COMPARATIVE EFFECTS OF COMBUSTIBLE CIGARETTES AND TOBACCO HEATING PRODUCTS

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OP03

Background: Persistent immune activation contributes to the progression of chronic inflammatory diseases, including chronic obstructive pulmonary disease (COPD), diabetes mellitus (DM), and ulcerative colitis (UC). Combustible cigarette (CC) smoke promotes systemic inflammation, oxidative stress, and inflammatory cytokine production. Tobacco heating products (THPs) generate aerosols through a non-combustion process and are promoted as potentially less harmful alternatives. However, differences in aerosol composition may lead to distinct immune responses, and their long-term effects on systemic inflammation in chronic diseases remain insufficiently characterized.

Methods: A total of 200 participants with COPD, DM, or UC and healthy controls were enrolled. Diagnoses were confirmed using standard disease-specific criteria. Participants without other acute or chronic conditions were included and stratified by smoking status as CCs users, THPs users or non-smokers. Cytokine production by circulating leukocytes was assessed by flow cytometry, and serum cytokine concentrations were measured by ELISA.

Results: In patients with COPD and DM, both CCs and THPs altered cytokine production; however, CCs induced stronger pro-inflammatory responses, characterized by increased production of Th1/Th17-associated cytokines, including TNF-α, IL-1β, IL-17, IL-4, IL-5, and IL-22. THPs elicited comparatively weaker inflammatory responses but were associated with enhanced production of immunosuppressive cytokines (IL-10 and IL-35) and the pro-fibrotic cytokine TGF-β. In patients with UC, neither CCs nor THPs significantly aggravated systemic inflammation. However, THP use in UC was associated with a preferential increase in immunosuppressive cytokine production.

Conclusions: Both CCs and THPs modulate systemic immune activity, with disease-specific effects. CCs predominantly enhance pro-inflammatory pathways in COPD and DM, whereas THPs favour immunosuppressive and pro-fibrotic cytokine responses. These findings emphasize the need for disease-specific assessment of tobacco-related immune modulation and caution against assuming reduced inflammatory risk with THP use.

COMPARATIVE CLINICAL EVALUATION AND HISTOPATHOLOGICAL ASSESSMENT OF ORAL MUCOSA IN CIGARETTE SMOKERS AND HEATED TOBACCO PRODUCT USERS

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OP04

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Background: Conventional cigarette smoking (CS) is a well-established risk factor for oral mucosal diseases, whereas the biological effects of heated tobacco products (HTPs) remain not fully understood. This study aimed to compare the clinical manifestations and histopathological characteristics of the oral mucosa in conventional CS and exclusive HTP users.

Material and Methods: This cross-sectional study included 83 tobacco users (47 CS and 36 exclusive HTP users, all former conventional smokers) and 40 healthy nonsmoking controls. All underwent standardized oral clinical examination. For histopathological assessment, 20 participants were randomly selected from each tobacco-use group, and incisional biopsies of the oral mucosa were obtained. Evaluation used hematoxylin–eosin and Van Gieson's picrofuchsin staining to assess epithelial architecture, inflammatory infiltration, vascular alterations, and connective tissue remodelling. Analyses were performed with IBM SPSS Statistics ($p < 0.05$ significant).

Results: CS exhibited significantly more frequent clinical oral lesions than HTP users, including diffuse erythema (21.3% vs. 5.6%), hyperkeratosis (12.8% vs. 0%), and leucoplakia (8.5% vs. 0%). Histopathology demonstrated significantly higher rates of epithelial hyperkeratosis (60.0% vs. 15.0%), acanthosis (55.0% vs. 10.0%), epithelial atrophy (35.0% vs. 5.0%), chronic inflammatory infiltration (80.0% vs. 30.0%), vascular congestion (75.0% vs. 20.0%), stromal oedema (50.0% vs. 15.0%), collagen disorganization (65.0% vs. 10.0%), and early fibrosis (45.0% vs. 5.0%) in smokers (all $p < 0.05$). Mild epithelial dysplasia occurred only among smokers (20.0%). Histological architecture remained largely preserved in HTP users, though mild inflammatory and connective-tissue changes were occasionally observed.

OP04

Conclusions: Conventional CS was associated with greater clinical and histopathological alterations of the oral mucosa than HTP use. Nevertheless, HTPs were also associated with measurable epithelial and stromal alterations, indicating that they are not biologically harmless. Regular oral examination of all tobacco users is warranted for the early detection of mucosal lesions, while complete tobacco cessation remains the most effective strategy for preserving oral health.

DISTRIBUTION OF DOPAMINE PATHWAY GENE POLYMORPHISMS IN SUBJECTS WITH DIFFERENT SMOKING BEHAVIOUR: IMPLICATIONS FOR TOBACCO HARM REDUCTION

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OP05

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Background: Multiple lines of evidence support the role of genetic constitution in the initiation, persistence, intensity, and success in cessation of tobacco smoking. This study questioned whether genetic variations in dopamine pathway influence smoking behaviour.

Material and Methods: The investigation included 1,230 subjects (570 current smokers; 246 former smokers; 267 non-smokers, who tried cigarettes at least once but did not become smokers; and 147 never-smokers, who did not even attempt to taste tobacco products). Twenty potentially functional gene polymorphisms have been selected for genotyping.

Results: First, we compared never-smokers, i.e. people who never even attempted to smoke, against the rest of the study. This comparison aimed to factors, which modify the interest in smoking. Secondly, we compared non-smokers versus habitual (former and current) smokers. This comparison addressed the question whether some of the studied genes influence the transition from occasional to habitual smoking. Thirdly, we analysed genotypes of former smokers with cessation period exceeding 6 months in comparison with current smokers. If p value is 0.05, 3 out of total 60 comparisons will pass this threshold solely due to chance. In fact, there were 13 comparisons with $p < 0.05$, which indicates that at least some of the observed associations are indeed relevant to smoking behaviour. There were statistically significant differences between never- versus ever-smokers ($p = 0.021$) and between non-smokers versus habitual former or current smokers ($p = 0.029$). In contrast, the difference between former and current smokers did not reach statistical significance. Two gene polymorphisms (DAT1 40-bp repeat and MAOA 30-nucleotide repeat) showed consistent associations across all three comparisons.

Conclusions: This study suggests that genetic constitution influences the interest in smoking initiation as well as the transition from occasional to habitual smoking. If replicated, these data deserve to be considered in studies addressing personalized strategies for tobacco harm reduction.

THE IMPACT OF ACTIVE CIGARETTE SMOKING ON THE DEVELOPMENT OF PULMONARY FIBROSIS IN PATIENTS WITH PULMONARY SARCOIDOSIS

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OP06

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Background: A trend toward pulmonary fibrosis in sarcoidosis is accelerated by smoking. Serum surfactant protein D (SP-D) serves as a sensitive biomarker of alveolar epithelial injury. Investigating changes in lung injury markers among persistent smokers transitioning to heated tobacco products (HTPs) is essential within tobacco harm reduction frameworks.

Objective of this study was to evaluate and compare pulmonary fibrosis progression between smoking and non-smoking chronic pulmonary sarcoidosis patients and assess the short-term impact of switching to HTPs.

Material and Methods: A total of 119 patients with chronic pulmonary sarcoidosis (radiographic stage II) were examined. The mean age was 37.6±11.2 years. There were 33 (27.7%) active cigarette smokers. All patients received identical standard therapy. Serum SP-D was investigated as a potential marker of the risk of development and progression of pulmonary fibrosis (normal range 10-100 ng/mL).

Results: Baseline SP-D levels were elevated in all patients, though significantly higher in active smokers compared to non-smokers (167.0±8.9 ng/mL vs. 125.0±9.1 ng/mL, $p<0.05$). Following smoking cessation and harm reduction counselling, 18 patients switched to HTPs, 15 continued smoking cigarettes, and 86 remained non-smokers. After one year, SP-D levels normalized in non-smokers (56.0±9.02 ng/mL) and were minimally elevated in the HTP group, whereas levels remained significantly elevated in persistent smokers (159.0±13.6 ng/mL vs. 81.0±10.2 ng/mL in the HTP group, $p<0.05$).

Conclusion: The pilot study findings demonstrate a promising trend toward mitigating the progression of pulmonary fibrosis in sarcoidosis patients who switched from combustible cigarettes to HTPs compared to persistent smokers, highlighting the potential of such products to reduce harm and underscoring the critical need for further longitudinal clinical and imaging studies to fully evaluate their long-term clinical potential and safety profile.

POSTER PRESENTATIONS

MEXICAN STUDY ON THE CHEMICAL CHARACTERIZATION OF VAPORIZER LIQUIDS

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PP01

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WITHDRAWN

THE DYNAMICS OF BIOMARKERS OF EXPOSURE AFTER SWITCHING FROM CONVENTIONAL CIGARETTES TO TOBACCO HEATING SYSTEM

Sayar Abdulkhakov

PP02

PMI

Introduction: The primary objective of this study was to assess the levels of biomarkers of exposure in smokers transitioning from conventional cigarettes (CC) to tobacco heating system (THS) in comparison to continuing smoking and smoking abstinence.

Material and Methods: Sixty volunteers (adult smokers) (m: 48, f: 12; age 21 to 69) were randomized to 3 groups (THS; conventional cigarettes, CC; smoking abstinence, SA) for the 5 days of the study. Levels of nicotine, nicotine glucuronides and their derivatives, and mercapturic acids were evaluated in 24-hour urine; levels of nicotine derivatives and carboxyhemoglobin were measured in blood.

Results: No adverse events were registered during the study. On Day 5, blood carboxyhemoglobin levels in CC group were significantly higher than in THS ($p=0.037$) and SA ($p=0.003$) groups, whereas no significant difference was observed between THS and SA groups ($p=0.531$). On Day 0, volunteers of all 3 groups (CC, THS, SA) were comparable in terms of nicotine metabolites concentration in daily urine. Levels of nicotine and metabolites (cotinine, nornicotine, trans-3-hydroxycotinine), nicotine glucuronides and cotinine, nitrosonornicotine, 4-methylnitrosamino-1-3-pyridyl-1-butanol, and anabasine in urine didn't differ statistically in CC group on Day 0 and Day 5. Switching from CC to THS leads to significant decrease in several metabolites while still sustaining consistent nicotine level by Day 5: 1) Concentration of urine mercapturic acids in THS and SA groups significantly decreased by Day 5 ($p<0.001$ for 2-cyanoethylmercapturic acid, S-(3-hydroxypropyl) mercapturic acid, 3-hydroxy-1-methylpropyl-mercapturic acid (HMPMA), S-phenylmercapturic acid; $p=0.001$ for monohydroxybutenyl-mercapturic acid. 2) No difference was found in mercapturic acids levels between THS and SA groups on Day 5 ($p>0.05$), with the exception for HMPMA ($p=0.045$). 3) Levels of all measured mercapturic acids in THS group were significantly lower on Day 5 comparing with CC group.

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PP02

Conclusion: Results of the 5-day study demonstrate the significant decrease of bioexposure markers concentrations almost to the level of smoking abstinence when switching from CC to THS. These findings provide short-term biomarker-of-exposure data relevant to the scientific assessment of THS; longer-term studies are required to establish their clinical significance.

OPTIMIZATION OF A PRIMARY HUMAN GINGIVAL EPITHELIAL CELL MODEL FOR IN VITRO TOBACCO EXPOSURE STUDIES

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PP03

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Background: Standardized *in vitro* exposure models are essential for investigating the biological effects of tobacco products on oral epithelial cells. However, considerable methodological variability in extract preparation, exposure conditions, and experimental design limits reproducibility and direct comparison between studies. This study aimed to establish a reproducible submerged exposure model for primary human gingival epithelial cells (HGECs) using conventional cigarette smoke extract (CSE) and nicotine-matched heated tobacco aerosol extract (HTAE), while defining biologically relevant exposure conditions for subsequent mechanistic analyses.

Material and Methods: Primary HGECs were cultured under standardized conditions, and the optimal seeding density was determined using the MTT assay. Cellular metabolic activity was subsequently evaluated after exposure to increasing concentrations of CSE (2.5%, 5%, 10%, and 20%) or nicotine-matched HTAE (4%, 7.5%, 15%, and 30%) for 24 and 48 h. Seeding density optimization was performed in quadruplicate (n = 4), whereas exposure experiments were conducted in three or four independent biological replicates (n = 3-4). Data were analysed using repeated measures, one-way and two-way ANOVA with appropriate post hoc comparisons.

Results: A seeding density of 5,000 cells/well provided reproducible growth while avoiding excessive confluence. CSE showed progressively lower cellular metabolic activity with increasing concentration, with significant reductions observed at 10% and 20% after 48 h (70.5 ± 2.4% and 47.7 ± 7.1%, respectively). In contrast, nicotine-matched HTAE did not significantly affect cellular metabolic activity after 24 h but showed significant concentration-dependent reductions after 48 h, at concentrations ≥7.5%, reaching 57.9 ± 6.9% at 30% HTAE. The optimized protocol identified 2.5% and 5% CSE and nicotine-matched 4% and 7.5% HTAE as biologically suitable exposure conditions for subsequent mechanistic studies.

ABSTRACT BOOK

PP03

Conclusions: This study provides a reproducible HGEC exposure model using nicotine-matched CSE and HTAE and defines standardized experimental conditions suitable for future investigations of tobacco-induced inflammatory and oxidative stress responses.

TOBACCO HARM REDUCTION AS A MISSING COMPONENT OF CORPORATE CESSATION PROGRAMS: READINESS TO CHANGE AMONG EMPLOYEES OF A MACHINE-BUILDING ENTERPRISE

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PP04

Background: Smoking prevalence among Russian industrial workers reaches 61% versus 17% in the general population. Classic corporate cessation programs address only employees already intending to quit. Tobacco Harm Reduction (THR) —supervised switching to non-combustible tobacco products— is proposed as a way to reduce toxic exposure in the remaining majority. We assessed employees' readiness to participate in corporate tobacco programs and their motivation to quit by stages of the Prochaska and DiClemente transtheoretical model.

Material and Methods: Cross-sectional study, March-August 2024, machine-building enterprise, Russia; 440 consenting employees (workers, specialists, managers) who smoked or experienced second-hand smoke. Readiness was assessed on a 5-point stage scale using registered software. Distributions were compared across seven smoking/exposure types by Pearson's chi-square test with Holm correction and Cramer's V. No intervention was delivered.

Results: Of 377 active nicotine users, 351 (>93%) reported no interest in cessation programs; motivation distribution differed by smoking type. Among factory-cigarette smokers, 90.4% (188/208) were in "pre-contemplation stage."

Conclusions: In this sample, the absence of interest in cessation support reflects not indifference to health but a mismatch between a single quit-oriented offer and the actual distribution of readiness stages. Because such offers are designed for smokers already intending to quit, a quit-only program leaves the precontemplative majority observed here without any intervention. Limitations: readiness alone was measured; no THR-based program was delivered or evaluated; willingness to switch to non-combustible products was not assessed; single enterprise, self-reported data. Drawing on external evidence that switching to non-combustible products lowers exposure to harmful constituents, and on their inclusion as an option in several current clinical guidelines, we propose —as a hypothesis for prospective testing, not a result of this study— a stage-matched program offering THR to workers unready to quit, with complete cessation of nicotine use remaining the ultimate goal.

THE RELATIONAL PERCEPTION OF COMBUSTIBLE TOBACCO SMOKING AND HEATED TOBACCO PRODUCT USE WITHIN A BROADER LANDSCAPE OF HEALTH-RISK BEHAVIOURS

Oana Voicu

PP05

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Background: This study aimed to examine how adults perceive combustible tobacco smoking and heated tobacco product use within a wider landscape of traditional and emerging health-risk behaviours. The analysis forms part of "Healthy Choices – Beyond the Shadows", an initiative developed by CREDU in 2025.

Material and Methods: A cross-sectional CAWI/CATI survey included 1,200 adults aged ≥21 years. Interviews with 20 health professionals and one focus group with 15 adults provided context. Measures included risk perception, dominant behaviours, perceived functions, change attempts, intentions, and perceived control.

Results: Although 85% considered prevention important, only 56% reported preventive action. Excessive phone use was identified as the dominant risk behaviour by 36%, followed by unbalanced eating (18%), excessive television or video streaming (16%), combustible tobacco smoking (13%), and heated tobacco product use (1%). Smoking generated the strongest reported difficulty in changing and was associated with acknowledged harm, repeated cessation attempts, stress regulation, reward, and social routines. Heated tobacco products had lower personal salience and were interpreted in relation to combustible tobacco smoking as a perceived lower-risk alternative or evidence of progress away from smoking.

ABSTRACT BOOK

PP05

Conclusions: Combustible tobacco smoking and heated tobacco product use were understood within a broader and changing hierarchy of everyday health-risk behaviours. Smoking occupied a paradoxical position: it was less prominent than several contemporary behaviours yet remained strongly associated with acknowledged harm and difficulty in sustaining change. Heated tobacco products showed lower salience and were interpreted through perceptions of reduced risk and progress relative to smoking. The findings suggest that risk perception, behavioural salience, and perceived changeability represent distinct dimensions that should be considered together. Health education and communication may therefore benefit from moving beyond single-behaviour approaches and situating combustible tobacco smoking and heated tobacco product use within the wider behavioural context through which individuals understand, prioritize, and attempt to manage health risks.

SMOKING AS A RISK FACTOR FOR BONE MARROW MICROMETASTASIS IN RESECTABLE NON SMALL CELL LUNG CANCER

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PP06

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Background: The role of smoking in early hematogenous tumour spread has not been sufficiently studied. Disseminated Tumour Cells (DTCs) in bone marrow are considered a marker of minimal residual disease.

The objective of this study was to assess the association between smoking status and bone marrow micrometastasis in resectable NSCLC and to explore disseminated tumour cells as a candidate biomarker for future studies investigating the impact of smoking on minimal residual disease and its potential modification.

Material and Methods: The study included 68 patients with resectable NSCLC who underwent preoperative bone marrow aspiration. Morphological examination and multicolour flow cytometry were performed. DTCs were defined as $EpCAM^{+}CD45^{-}$ cells; 20–100 million myelokaryocytes per sample were analysed, and ≥1 cell per 10^{7} myelokaryocytes was considered a positive result. CD133 expression was evaluated. Patients were stratified by stage, histological type, grade, and smoking status.

Results: DTCs were detected in 56% of patients, including early stages (IA, 60.7%; IIA, 58.3%). In 6.6% of samples, the level reached 1 cell per 10^{6} myelokaryocytes. $CD133^{+}$ cells were found in 33.3% of DTC positive cases. The presence of DTCs was not associated with age, sex, or lymph node status, but was more frequent in well differentiated tumours. Among current smokers, DTCs were detected in 71.4% of cases versus 42.0% in non smokers (p=0.045).

Conclusions: Bone marrow micrometastasis in resectable NSCLC is a frequent and early event. Smoking is associated with a higher detection rate of DTCs, suggesting a possible role in hematogenous tumour dissemination. Given the limitations of the study design, the present data do not allow any conclusions regarding the effects of specific tobacco use modification strategies or harm reduction interventions. DTCs may be proposed as a candidate biomarker for future research aimed at elucidating the relationships between smoking, minimal residual disease and potential harm reduction approaches. Complete smoking cessation remains the priority.

IMPACT OF SMOKING STATUS ON HEMODYNAMIC AND METABOLIC RESPONSES IN PATIENTS WITH RESISTANT HYPERTENSION AND OBSTRUCTIVE SLEEP APNOEA: A PROSPECTIVE COMPARATIVE STUDY

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PP07

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Background: This study aimed to evaluate the impact of smoking status —cigarette smoking (CS), heated tobacco product (HTP) use, or non-smoking (NS)— on short-term hemodynamic and metabolic responses in patients with resistant hypertension and moderate-to-severe obstructive sleep apnoea (OSA), focusing on switching from CS to HTPs as a potential tobacco harm reduction (THR) strategy.

Material and Methods: Ninety patients with resistant hypertension and moderate-to-severe OSA were prospectively stratified into three groups (n=30 each): NS (mean age 47.70±12.63 years), HTP users who had switched from CS to HTPs within 1 month before inclusion (48.87±12.74 years), and CS users (50.43±8.44 years). Smoking status was verified by self-report. OSA was diagnosed by cardiopulmonary monitoring (AHI ≥15). Resistant hypertension was defined as BP ≥140/90 mmHg despite treatment with ≥3 antihypertensive drugs, including a diuretic and a renin-angiotensin-aldosterone system inhibitor. All patients initiated CPAP therapy at inclusion. Groups were comparable in age, weight, OSA severity, BP, SpO_2, and eGFR (CKD-EPI).

Results: After two months of CPAP (minimum adherence 4 h/night) and pharmacological therapy, systolic BP significantly decreased in all groups. Diastolic BP decreased significantly in NS and HTP groups ($p<0.001$). Nocturnal SpO_2 improved in all groups ($p<0.001$), while daytime SpO_2 improved only in NS and HTP groups ($p<0.001$). Microalbuminuria significantly decreased in all groups, whereas eGFR improved significantly only in NS and HTP groups ($p<0.001$).

Conclusions: Smoking status was associated with different short-term hemodynamic and metabolic responses in patients with resistant hypertension and OSA. Compared with continued CS, switching to HTPs was associated with significant improvements in eGFR, diastolic BP, and daytime SpO_2 after two months of complex treatment. These preliminary findings suggest potential short-term benefits of switching from CS to HTPs, supporting further investigation of HTPs as a THR strategy in this high-risk population.

IMPACT OF TOBACCO PRODUCT TYPE AND CUMULATIVE SMOKING HISTORY ON POSTOPERATIVE COMPLICATIONS IN ORAL CAVITY CANCER: A SINGLE CENTRE COHORT STUDY

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PP08

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Introduction: Surgical treatment of oral cavity cancer carries a high risk of postoperative complications. Continued smoking is a key modifiable risk factor, but the perioperative impact of heated tobacco products (HTP) in patients with long smoking histories is unclear. This study evaluated the association between type of nicotine containing product and postoperative complications.

Material and Methods: This single centre prospective cohort included 120 patients with stage I–IV oral cavity malignancies. Three groups: combustible cigarette smokers (n=37), HTP users (n=25), and never smokers (n=58). Within the HTP group, duration of exclusive HTP use and prior cigarette smoking history were recorded. The primary endpoint was the occurrence of any surgical complication during hospitalization. Pearson's χ^2 test and Fisher's exact test were used; multivariable logistic regression adjusted for age and cumulative pack years.

Results: Postoperative complications occurred in 21/120 (17.5%) patients. In unadjusted analysis, rates differed significantly (χ^2=18.64; p<0.00001): cigarettes 37.8% (14/37), HTP 20.0% (5/25), never smokers 3.4% (2/58). HTP users had a lower observed complication rate than cigarette smokers (20.0% vs 37.8%; OR=2.43; 95% CI 0.75–7.96; p=0.17), but this difference was not statistically significant. Among HTP users, complication risk did not depend on the duration of exclusive HTP use (p=0.64). Patients with a prior cigarette smoking history >10 years had more complications than those with ≤10 years (OR≈4.89; p=0.32), also without statistical significance. After adjustment for age and pack years, odds ratios for cigarette smokers and HTP users remained elevated but did not reach significance, likely due to the limited number of events.

Conclusions: In this cohort, HTP use was associated with a lower observed rate of postoperative complications than cigarette smoking, while risk remained higher than in never smokers. The pattern suggests an important role of cumulative damage from combustion products. These preliminary findings are consistent with the harm reduction continuum but require confirmation in larger prospective studies.

NEGOTIATING HARM REDUCTION IN CLINICAL PRACTICE: ROMANIAN PHYSICIANS' PERSPECTIVES ON RISK BEHAVIOURS

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PP09

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Background: Harm reduction is often discussed as a matter of regulation, yet its practical implementation frequently occurs in clinical encounters, where physicians must translate risk evidence into acceptable behavioural recommendations. This study explores how Romanian physicians understand and use harm reduction when advising patients exposed to modifiable risk behaviours such as smoking, alcohol consumption, unhealthy diet, and sedentary behaviour.

Material and Methods: A qualitative study was conducted between August and September 2024 using semi-structured interviews with 19 physicians from Transylvania and Bucharest, representing diverse specialties, including pulmonology, oncology, family medicine, diabetology, psychiatry, gynecology, dentistry, surgery, endocrinology, otorhinolaryngology, and medical management. The interviews examined physicians' perceptions of risky behaviours, counselling strategies, attitudes toward prohibition versus mitigation, and perceived barriers to lifestyle change.

Results: Physicians generally recognized all investigated behaviours as clinically relevant risk factors but differed in how they ranked their severity and in how they defined successful behaviour change. While some considered complete cessation the only meaningful clinical endpoint, others viewed any reduction in exposure as a valuable therapeutic gain, especially when abstinence was unrealistic. Harm reduction emerged less as a formal protocol and more as a flexible communication strategy shaped by specialty, pathology, patient readiness, education, addiction severity, and the quality of the therapeutic relationship. Respondents widely rejected stigmatization and coercion, emphasizing explanation, negotiation, empathy, and individualized recommendations. However, they also expressed uncertainty regarding substitution strategies, especially electronic cigarettes, due to perceived gaps in long-term evidence.

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Conclusions: The findings suggest that harm reduction in Romanian clinical practice should be understood as a relational and ethical process, not only as a policy framework. Strengthening physicians' communication training and developing evidence-based counselling tools may support more realistic, non-stigmatizing approaches to risk reduction.

THE ROLE OF CARBOCYSTEINE IN COMBINATION WITH TRIPLE INHALATION THERAPY IN THE TREATMENT AND REHABILITATION OF PATIENTS WITH EXACERBATION OF COPD STAGE 2

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PP10

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Background: Chronic obstructive pulmonary disease (COPD), primarily caused by smoking, is the third leading cause of death worldwide. Inhaled glucocorticosteroids are part of the recommended triple therapy for COPD exacerbations. However, in patients who continue to smoke, the effectiveness of corticosteroids is significantly reduced: they do not slow disease progression or suppress mediator production in alveolar macrophages due to oxidative stress, which blocks HDAC2 activity.

Objective of this study was the comparative analysis of the effects of switching to HTP and carbocysteine use on lung function recovery during combination therapy and rehabilitation for exacerbations of spirometric stage II (moderate) COPD in male smokers.

Material and Methods: The study included 37 men with stage II COPD during a bacterial exacerbation. All participants were active smokers with a smoking history of more than 20 years. Three groups were formed: Group 1 (n=14, standard therapy + rehabilitation + carbocysteine); Group 2 (n=11, standard therapy + rehabilitation + complete switch to HTP); and Control Group (n=12, standard therapy only, continuous smoking without rehabilitation).

Results: Both groups showed comparable increases in FEV1: Group 1 – 17.8% and Group 2 – 17.1%, reflecting a reduction in inflammation and improved lung elasticity. In the control group, FVC, FEF25-75, and FEV1 remained virtually unchanged. Particularly significant was the lack of increase in FEF50 and FEF75 — markers of distal bronchiole health. This indicates persistent exposure to tobacco combustion products and reduced HDAC2 activity, which limits the effectiveness of inhalation therapy.

Conclusion: Integrating alternative modified-risk products like HTP into personalized management plans provides a highly effective harm reduction pathway for COPD patients unwilling to quit smoking. Fully switching to HTP decreases toxic exposure and achieves objective improvements in lung function comparable to targeted antioxidant pharmacotherapy.

INVESTIGATING THE EFFECT OF DIFFERENT NICOTINE DELIVERY SYSTEMS ON BRONCHIAL ASTHMA CONTROL AND CLINICAL COURSE

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PP11

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Background: Alternative nicotine products are rising in popularity, but their impacts on bronchial asthma (BA) remain unclear. Under WHO FCTC regulations, assessing patient awareness of tobacco control and cessation support is crucial. This study evaluates how various nicotine delivery systems affect BA control, lung function, quality of life, and inflammatory profiles in adults aged 18-45.

Material and Methods: This open-label observational study evaluated 153 BA patients (149 male, 4 female; mean age 22.14±3.09 years). Metrics encompassed ACT, AQLQ, FEV1, FeNO, and inflammatory biomarkers (eosinophils, ECP, periostin, TSLP, IL-13). Smoking history, consumption intensity, and duration of alternative product use were recorded. A sub-survey (n=28) evaluated tobacco control awareness and passive smoking exposure.

Results: The cohort comprised 59 non-smokers and 94 active nicotine users. Among users, 56.4% were multi-users (dual users of combustible cigarettes and alternative devices). Compared to non-smokers, nicotine users exhibited significantly lower ACT (by 2.7 points, $p<0.001$), FEV1 (by 4.5%, $p<0.05$), and AQLQ scores (by 0.83 points, $p<0.001$). Users showed lower ECP (by 18.3%, $p<0.05$) but higher neutrophils (by 14.3%, $p<0.01$), periostin (by 31.0%, $p<0.05$), and TSLP (by 73.5%, $p<0.05$). Device-type subgroup analysis showed no significant differences ($p>0.05$). This homogeneity across groups is likely attributed to highly fluid, socioeconomically driven multi-user and triple-user patterns, making precise quantification of product-specific exposure technically unfeasible at this stage. The sub-survey revealed high second-hand smoke exposure: public places (72%), home (53%), work (48%). Only 30% knew of cessation support; 55% deemed anti-tobacco measures ineffective.

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Conclusions: Nicotine users had poorer asthma-control, lung function, and quality-of-life measures than non-smokers. However, the predominance of multi-product use (56.4%) prevented reliable attribution of these findings to individual nicotine-delivery systems. The observed inflammatory shift toward neutrophilic pathways highlights the need for effective harm reduction communication, particularly for multi-users and heavy smokers unable to quit entirely. High passive smoke exposure and gaps in public health literacy underscore the critical need for enhanced patient education regarding cessation support and harm reduction.

CASE REPORT: TOBACCO CESSATION VIA CHANGE IN NICOTINE PRODUCT IN PATIENT WITH DIABETES AND NEUROPATHIC FOOT ULCER

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PP12

Background: Tobacco smoking is a critical modifiable factor in the progression of diabetic foot syndrome, delaying wound epithelialization through microvascular and inflammatory mechanisms, as systematized in our group's review on smoking-related target organ damage in diabetes mellitus. We describe a clinical observation of a non-healing forefoot ulcer in a patient who switched from combustible cigarettes to a heated tobacco product (HTP), while standard wound care and offloading of the affected leg continued unchanged.

Material and Methods: A 58-year-old man with type 2 diabetes mellitus of 12 years' duration, hypertension, dyslipidaemia, peripheral neuropathy and a Wagner grade 1 forefoot ulcer, smoking about 20 cigarettes daily for over 30 years (Fagerström score 8), was followed in an outpatient foot clinic. Despite repeated counselling, complete abstinence was not achieved; he first reduced cigarette consumption, then fully switched to an HTP, eliminating combustion and pyrolysis products (tar, carbon monoxide, free radicals) linked to target-organ damage. Standard wound care and glycaemic management continued unchanged throughout, with follow-up at 4, 8 and 12 weeks after the complete switch; exhaled carbon monoxide, Fagerström score and wound status were recorded at each visit.

Results: Over the 12-week follow-up after completely switching to HTP, exhaled carbon monoxide declined progressively, and the Fagerström score fell from 8 to 5. The forefoot ulcer showed accelerated epithelialization, with near-complete closure by week 12; HbA1c remained stable throughout. No adverse events attributable to the change in nicotine product were recorded.

Conclusions: In this single-patient observation, wound closure occurred temporally after the switch to HTP under unchanged standard diabetic foot care; as an uncontrolled case, this design cannot establish a causal contribution of the product switch to healing, and confounding by standard care alone cannot be excluded. These findings are hypothesis-generating only and, consistent with our group's ongoing research, warrant prospective, controlled evaluation before any clinical inference is drawn.

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THE IMPORTANCE OF EVIDENCE-BASED COMMUNICATION: A MILESTONE FOR TOBACCO HARM REDUCTION

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PP13

The approval of the Vuse Golden Tobacco scientifically substantiated claim on reduced toxicants compared to cigarettes in Greece represents an important milestone for evidence-based tobacco harm reduction and for the responsible communication of differentiated-risk nicotine products. Under the Greek regulatory framework, the communication of claims may be permitted where evidence demonstrates significantly reduced toxic emissions, reduced toxicity, or reduced exposure compared with conventional cigarettes, subject to Ministry of Health approval and appropriate consumer warnings. This framework is rooted in joint ministerial decisions involving the Ministers of Development, Competitiveness, Infrastructure and Networks, and Health.

The Vuse Golden Tobacco application was supported by a scientific dossier that reflected the evidentiary requirements specified in the Greek process. These include emissions assessment using recognized scientific methods, pre-clinical studies conducted under Good Laboratory Practice principles, and clinical studies conducted in line with Good Clinical Practice to assess reduced exposure to toxic substances compared with cigarette smoking. The approved claim states that 'The aerosol generated during the use of VUSE GOLDEN TOBACCO contains a lower number and lower concentrations of chemical substances with known toxicity compared to the smoke of a conventional cigarette'. Importantly, the approved communication is accompanied by a disclaimer making clear that this does not imply a corresponding reduction in health risk, that the product contains nicotine and other hazardous substances, and that complete cessation remains the best option.

This decision is significant because it is presented as the first scientific claim granted for a vapour product across Europe, approved by an independent Scientific Evaluation Committee under the Ministry of Health in Greece. This provides a timely case study in how robust science, regulatory scrutiny, and balanced consumer communication can support more informed adult smoker decision-making and strengthen the broader dialogue on tobacco harm reduction.

THE STUDY OF PERSONALISED REHABILITATION EFFECTIVENESS COMBINED WITH THE CONCEPT OF TOBACCO HARM REDUCTION FOR PATIENTS WITH RESECTABLE LUNG CANCER

Boris Kasparov

PP14

PMI

Background: Increasing the life expectancy of patients with resectable non-small cell lung cancer (NSCLC) after complex treatment is associated with various types of psychological and physical functioning disorders that reduce the overall quality of life A comparative analysis of two alternative strategies for choosing rehabilitation programs in patients with resectable NSCLC was carried out considering the recommended technologies (RT) of physical and rehabilitation medicine (PRM) and without them (standard rehabilitation approach), determinants influencing the formation of the therapeutic effect after the use of rehabilitation programs. Also, Tobacco Harm Reduction concept was applied for smoking patients.

Material and Methods: The study included in total 240 patients* with resectable NSCLC, aged 45 to 71 years (median 60.2 years), who received surgical treatment and rehabilitation as part of combined/complex treatment in the period from 2017 to 2022. According to the study design, patients in the comparison group (standard rehabilitation measures) were distributed in pairs with the observation group (personalized rehabilitation model).

In the study involving 98 patients in the experimental group (using ANDS throughout the course of rehabilitation) and 96 in the control group (who continued cigarette smoking), it was demonstrated that the use of alternative nicotine delivery systems (ANDS), such as electronic cigarettes and heated tobacco products (HTPs), in the presence of incentives to continue smoking during rehabilitation, contributes to increasing the effectiveness of personalized rehabilitation up to 86%, compared to the control group (78%). Patients with NSCLC IA - III stages were included in the study. They were balanced in both groups by the main features: gender, age, functional status of patients, histological subtype, stage of the main process, volume of antitumor treatment. The average age was ~60 years in both groups (36-72 and 35-71 years, respectively). Rehabilitation efficacy was evaluated via clinical, functional, psychophysiological, and quality-of-life indicators.

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Results: The results of multivariate analysis showed that ANDS transition was one of 6 main factors that influenced the high effectiveness of rehabilitation in the experimental group (20,48% of explained variance, χ^2 = 487,3; p < 0,001) and reduced the risk of adverse events after rehabilitation by up to 44% compared to the control group 95% CI 0,992-2,935; relative risk 1,706). Also, according to the results of the patient survey, 50% (n=49) of smokers in the experimental group quit smoking in 24 months, while only 25% (n=25) in the control group.

Conclusions: The use of ANDS as part of the harm reduction concept for lung cancer patients increases the effectiveness of personalized rehabilitation by up to 86% in complex cases. Collaborative efforts to understand and, if possible, reduce risks during the rehabilitation for lung cancer patients can significantly improve the effectiveness of rehabilitation. The rationale decisions about risk reduction among smokers must be based on evidence-based principles.

**Two groups were formed, with 120 patients each. In the first group there were 98 smoking patients, 22 nonsmoking; in the second group 96 smoking patients, 24 nonsmoking.*

EFFECT OF CONSERVATIVE PHYSIOTHERAPY INTERVENTIONS ON CARDIORESPIRATORY PARAMETERS IN TOBACCO SMOKERS: A SCOPING REVIEW

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PP15

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Background: Tobacco smoking is a preventable risk factor for cardiorespiratory dysfunction and may cause early impairments. Smokers may demonstrate alterations in pulmonary function, respiratory muscle strength, chest expansion, exercise capacity and cardiovascular regulation. Conservative physiotherapy interventions may address these impairments, but evidence remains dispersed.

Our objective was to map available evidence on conservative physiotherapy interventions for cardiorespiratory impairments in tobacco smokers and identify major interventions and outcomes.

Material and Methods: A scoping review was conducted using a structured search approach. PubMed/MEDLINE, Embase, Scopus, Web of Science, Cochrane CENTRAL, and Google Scholar were searched. Studies involving tobacco smokers and conservative physiotherapy or exercise-based interventions with relevant cardiorespiratory outcomes were considered. Interventions included respiratory/inspiratory muscle training, breathing and diaphragmatic exercises, yogic breathing, aerobic and high-intensity interval training, resistance and concurrent training, proprioceptive neuromuscular facilitation and manual therapy. Pharmacological or surgical interventions, non-smoking populations and studies without relevant outcomes were excluded. Data were charted according to population, intervention, study design, duration and outcomes.

Results: Approximately 30 records were identified. Following screening and eligibility assessment, pharmacological, non-relevant, inappropriate interventions or outcomes were excluded. Twenty studies were included in the final scoping review. The evidence encompassed respiratory/inspiratory muscle training, breathing exercises, aerobic and high-intensity interval training, resistance/concurrent training, proprioceptive neuromuscular facilitation and manual therapy. Reported outcomes included pulmonary function, respiratory muscle strength, chest expansion and respiratory muscle activity; selected studies assessed exercise capacity, autonomic regulation and arterial stiffness.

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Conclusion: Conservative physiotherapy demonstrates a potential role in addressing smoking-related cardiorespiratory impairments. Respiratory muscle training, breathing exercises, therapeutic exercise and manual therapy may improve respiratory, thoracic and selected cardiovascular outcomes. Physiotherapy may complement tobacco cessation and cardiorespiratory rehabilitation. Heterogeneity in interventions, participants and outcomes highlights evidence gaps and the need for standardised protocols and further research.

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SMOKING CESSATION

COMPLETE SWITCHING, COMBUSTIBLE CIGARETTE SMOKING, AND SMOKELESS TOBACCO USE OVER TIME: RESULTS FROM THE LONGITUDINAL NICOTINE POUCH SURVEY (LNPS)

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PP16

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Background: The Longitudinal Nicotine Pouch Survey (LNPS) is an ongoing study in the US designed to describe changes in combustible cigarette smoking, smokeless tobacco use, and switching behaviours among adult users of nicotine pouches. This analysis presents longitudinal findings through Month-6 based on data collected under a rolling recruitment design.

Material and Methods: The LNPS is a longitudinal survey of adult past 30-day Velo Plus users who were current established combustible cigarette smokers or current established smokeless tobacco users at baseline. Recruitment and follow-up occur on a rolling basis, with assessments completed at Baseline, Month-1, Month-2, Month-3, and Month-6. Consenting recent purchasers of nicotine pouches are recruited through an online nicotine pouch retailer with email invitations and pop-up recruitment advertisements. The present analyses include participants who completed all study waves through Month-6. Outcomes included changes in mean combustible cigarettes per day (CPD), smokeless tobacco uses per day (UPD), and complete switching, defined as reporting no past 30-day combustible cigarette smoking or smokeless tobacco use at follow-up.

Results: Across follow-up assessments participants reported lower mean CPD and smokeless tobacco UPD compared with Baseline. A substantial proportion of participants reported complete switching between Baseline and Month-1, with switching rates continuing across subsequent follow-up waves.

Conclusions: Findings from the LNPS describe reductions in self-reported combustible cigarette smoking and smokeless tobacco use, along with reports of complete switching among adult Velo Plus users over time. Results are descriptive, based on self-reported data, and reflect outcomes among participants retained across all assessment waves in an actively recruiting longitudinal cohort.

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SMOKING CESSATION

A COLLABORATIVE MODEL FOR TOBACCO HAZARD CONTROL TO REDUCE HEALTH RISKS AMONG YOUNG SMOKERS IN INDONESIA

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PP17

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WITHDRAWN

PREOPERATIVE ANXIETY IN PATIENTS UNDERGOING ELECTIVE THORACIC SURGERY: ASSOCIATION WITH SMOKING STATUS AND CESSATION STRATEGIES

Albert Sigal

PP18

PMI

Background: Purpose of this study was to assess the level of preoperative anxiety in patients with nicotine dependence and to characterise the association between its change over time and the cessation strategy selected by the patient during the period preceding admission.

Material and Methods: This prospective, single-center observational study enrolled 96 patients scheduled for elective thoracic surgery. The study group comprised 53 current smokers (≥10 cigarettes/day) with moderate to high nicotine dependence, as assessed by the Fagerström Test for Nicotine Dependence. The comparison group consisted of 43 never-smokers. During the initial outpatient visit (approximately three weeks prior to hospitalization), all patients received strong recommendations to quit smoking and were provided with printed educational materials. At admission, patients were grouped according to the cessation strategy they had chosen themselves; strategies were neither randomly allocated nor assigned by the investigators: complete cessation without aids (n=14); switching to heated tobacco products (HTPs, n=17); nicotine replacement therapy (NRT, n=12), or continued smoking (n=10). Anxiety was measured using the Hospital Anxiety and Depression Scale (HADS-A) at both the initial outpatient visit and on the day of admission. Nicotine withdrawal symptoms were not measured with a dedicated instrument.

Results: At baseline, elevated anxiety was more prevalent among smokers (41/53, 77%) than among non-smokers (23/43, 54%) (p=0.019), with a more pronounced difference in males (84% vs. 61%, p=0.048). At admission, the prevalence of elevated anxiety differed across the strategy-defined subgroups. It fell from 82% to 41% among patients who had switched to HTPs (p=0.020) and from 75% to 25% among those using NRT (p=0.023). No statistically significant change was observed among patients who quit without aids (71% to 86%, p=0.343) or among those who continued smoking (80% at both time points, p=1.000).

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Conclusions: Elevated preoperative anxiety was recorded more frequently in smokers than in non-smokers, particularly among males. In this observational setting, NRT use and short-term switching to HTPs were associated with a lower prevalence of elevated anxiety at admission, whereas no such association was observed for unassisted cessation. The observed reduction in anxiety may in part reflect mitigation of nicotine withdrawal, although this mechanism was not directly assessed. Because the subgroups were small, self-selected and non-randomised, these findings are hypothesis-generating: they do not support causal inference and are not sufficient grounds for adopting tobacco harm reduction (THR) in oncological practice. The results argue for further evaluation of pharmacological support for nicotine-dependent patients preparing for surgery, preferably within randomised controlled trials.

SMOKING AS A MAJOR FACTOR IN THE PROGRESSION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE IN PATIENTS WITH A FREQUENT EXACERBATION PHENOTYPE

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PP19

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Background: According to current Russian clinical guidelines, smoking is one of the main causes of the development and progression of chronic obstructive pulmonary disease (COPD), therefore, achieving complete smoking cessation is crucial in the treatment of COPD patients. Our aim was to study the prevalence of smoking among COPD patients with the frequent exacerbation phenotype.

Material and Methods: Medical records of inpatients hospitalized for COPD exacerbations over the past 5 years were used.

Results: A total of 423 patient records were analyzed; 276 cases involved a single hospitalization (group 1), while 147 involved repeated hospitalizations (group 2) within a one-year period. In group 1, the average smoking history was 40 [28.5; 53] pack-years and in group 2, 40 [15; 50] pack-years ($p > 0.05$).

At the time of the initial hospitalization, 98 (35.5%) patients in group 1 and 44 (29.9%) in group 2 were current smokers ($p > 0.05$). On average, patients in both groups smoked 20 [10; 20] cigarettes per day despite having an established COPD diagnosis. It was found that patients who quit smoking did so, on average, 3 [0; 8] years after diagnosis. Only 9 (15.8%) patients in group 1 quit smoking immediately after the COPD diagnosis was established.

Only 42 (43%) patients in group 1 and 16 (36.4%) in group 2 received recommendations to quit smoking upon discharge. Following the first hospitalization, 25% of patients in group 2 received smoking cessation advice, 50% after the second hospitalization and 80% after the third. Notably, 50% of patients quit smoking on a doctor's recommendation only after a repeat hospitalization.

Conclusion: Patients with COPD find it difficult to quit smoking given the infrequent discussions with doctors about the importance of this step. Repeated smoking-cessation counselling was associated with higher cessation rates, highlighting the importance of consistent physician engagement.

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PRELIMINARY / INTERIM RESEARCH

CLINICAL ASSESSMENT AND HARM REDUCTION

SOCIAL PROFILE OF PATIENTS WITH PROGRESSIVE GLAUCOMA: THE IMPACT OF ALTERNATIVE NICOTINE DELIVERY SOURCES ON DISEASE ONSET AND PROGRESSION

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PP20

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Background: Glaucoma remains a leading cause of irreversible blindness globally. While intraocular pressure (IOP) is recognized as the most critical modifiable risk factor. Lifestyle choices, smoking habits, and glaucoma progression warrant further study beyond traditional clinical parameters. This interim study examines patient profiles and investigates whether alternative nicotine delivery systems could provide a less harmful lifestyle option for early clinical trends in progressive glaucoma.

Material and Methods: This ongoing multicentre study, is structured into two stages, targeting a sample of over 50 patients in real-world ophthalmological practices. Stage 1 involves deploying a specialized screening questionnaire to gather preliminary behavioural data. Concurrently, Stage 2 initiates an exploratory stratification of the current cohort (n=48) into four preliminary subgroups based on nicotine consumption status (n=12 per group): conventional smoking, e-cigarettes (ECs), heated tobacco products (HTPs), and non-smoking controls. As a pilot assessment, this stage tracks early trends in objective clinical parameters, primarily focusing on IOP dynamics.

Results: Preliminary interim analysis of the current cohort (n=48) revealed early, descriptive trends in IOP dynamics. Conventional cigarette users demonstrated the highest baseline IOP values (21.8 ± 2.4 mmHg) and the greatest subsequent fluctuations. In contrast, descriptive monitoring suggested lower mean IOP values and reduced variability in the EC (18.9 ± 1.8 mmHg) and HTP (18.5 ± 1.9 mmHg) subgroups, presenting an interim clinical trend that appears closer to the non-smoking controls (17.2 ± 1.5 mmHg) than to conventional smokers. Due to the study's ongoing nature and small sample size per arm, these findings are exploratory and definitive statistical significance between groups has not been established.

Conclusion: These preliminary, interim findings suggest that ECs and HTPs are associated with more favourable early IOP trends compared to conventional smoking. Preliminary data suggest that tobacco harm reduction strategies could be beneficial for glaucoma patients who smoke, although they are not yet conclusive for public health recommendations.

SMOKING CESSATION

EXPLORING PSYCHOSOCIAL FACTORS INFLUENCING SMOKING CESSATION AMONG CIGARETTE SMOKERS IN GABORONE

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PP21

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Background: Cigarette smoking remains a major public health concern and a leading cause of preventable morbidity and mortality worldwide. Despite growing awareness of the harmful effects of tobacco use and the implementation of tobacco control measures, smoking cessation remains challenging. Although many smokers express a desire to quit, sustained abstinence is often difficult to achieve without adequate support. Evidence from the 2024 Botswana STEPwise approach to surveillance for NCDs (STEPS) Survey indicated that most smokers wished to stop smoking; however, relatively few successfully maintained long-term abstinence. While biological determinants of smoking cessation have been extensively studied, limited evidence exists regarding the psychosocial factors influencing smoking cessation among cigarette smokers in Botswana. This study aims to explore the psychosocial factors influencing smoking cessation among cigarette smokers in Gaborone, Botswana.

Material and Methods: A qualitative study employing a phenomenological design will be conducted among adult cigarette smokers residing in Gaborone, who have attempted to quit smoking. Participants will be recruited from selected healthcare facilities in Gaborone, using maximum variation purposive sampling. Snowball sampling will be employed as a secondary recruitment strategy to enhance the diversity of experiences captured. Recruitment will continue until data saturation is achieved, with an estimated sample size of approximately 15 participants. Data will be collected through face-to-face semi-structured interviews guided by the Social Ecological Model.

Analysis and reporting plan: As this study is a research protocol, no results are presented at this stage. The findings will subsequently be reported in the form of a dissertation in accordance with University of Botswana requirements and disseminated through appropriate academic and professional platforms. A summary of the study findings will be made available to participating healthcare facilities and participants who request the results, subject to applicable ethical and institutional requirements.

EPIDEMIOLOGY & SOCIAL ISSUES

FROM COMBUSTION TO ALTERNATIVES: MODELLING POTENTIAL HEALTHCARE SAVINGS FROM CIGARETTE SUBSTITUTION IN CROATIA

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PP22

Background: Approximately 37.9% of Croatian adults smoke. Complete cessation remains the preferred outcome; however, many adults continue smoking despite repeated attempts. This study aims to estimate the health and budgetary impact on the Croatian Health Insurance Fund (HZZO) if adult smokers who would otherwise continue smoking completely switched from combustible cigarettes to heated tobacco products (HTPs).

Material and Methods: An open-cohort budget impact model will be developed from the HZZO perspective, following ISPOR recommendations. Croatian demographic, epidemiological, utilisation and cost data will be obtained from HZZO, the Croatian Institute of Public Health and the Croatian Bureau of Statistics, supplemented by published evidence. Adults will be stratified by age, sex and tobacco-use status. The model will include lung cancer, chronic obstructive pulmonary disease, myocardial infarction and stroke. The reference scenario will reflect continued smoking, cessation and relapse and will be compared with scenarios in which 10%, 20%, 30% or 50% of smokers who do not quit switch completely to HTPs. Dual use will be modelled separately. Outcomes will be projected over five years, with 10- and 20-year projections. Sensitivity analyses will address uncertainty in relative risks, sustained switching, dual use, latency and treatment costs.

Planned Analyses and Outcomes: The model is designed to estimate, for each scenario, the number of complete switchers and projected differences in disease events, healthcare utilisation, expenditure and net budget impact. Given the limited long-term independent epidemiological evidence for HTPs, alternative risk assumptions will be explored, including a conservative no-benefit scenario. Threshold analyses are planned to identify the switching rate and risk reduction at which budget neutrality could be achieved.

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Expected Contribution: The proposed study will establish a framework for assessing the potential consequences for HZZO of substituting cigarette smoking with HTP use among adults who would otherwise continue smoking. The study is designed to generate conditional scenario-based estimates rather than evidence that HTPs are safe or a substitute for smoking cessation. The modelling framework is intended to inform future health-economic assessment in Croatia and may provide a basis for adaptation to other Central and Eastern European countries.

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