(IQR 2.4–8.4). Overall, 373 patients (75%) lost ≥5% of baseline weight, yet cachexia-related ICD codes were present in only 113 (23%). Among uncoded patients, 274 met the ≥5% weight-based criterion, thus 55% of HNC patients were at risk for underdiagnosis. The median time to cachexia coding was 5.4 months after the index date (IQR 2.5–14.4). In 38% of HNC cachexia patients, coding occurred more than 6 months after ≥5% weight loss, indicating a meaningful diagnostic delay. DISCUSSION/SIGNIFICANCE OF IMPACT: EHR data provide sufficient density and cadence to track cancer-related weight loss with precision and reveal that cachexia often goes unrecognized despite clear, measurable weight loss. These findings reveal a gap between data visibility and clinical action and support EHR-based monitoring to enable earlier recognition and timely care.

Other

28 Locked out twice: How incarceration history shapes healthcare access for adults with mental illness†*

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OBJECTIVES/GOALS: A history of criminal incarceration in prison or jail is rarely considered in planning health services for individuals with mental illness. We estimate the impact of a history of incarceration on access to health care when needed among adults with mental illness. METHODS/STUDY POPULATION: Cross-sectional data from n=3,796 adults ages 32 to 42 who had been diagnosed with a mental illness were drawn from Wave 5 of the National Longitudinal Study of Adolescent to Adult Health database. Access to health care when needed was measured by answering the question "In the past 12 months, has there been any time when you thought you should get medical care, but you did not?" Regression-adjusted inverse probability of treatment weighting was used to adjust analyses of use of health care when needed for measured differences between individuals with prior incarceration (n=536) and those with no prior incarceration (n=3,260). Interaction terms were used to assess whether insurance, health and social status, chronic illness, and social support moderate the association between incarceration and unmet healthcare need. RESULTS/ANTICIPATED RESULTS: After balancing group characteristics, individuals with a prior incarceration were 7 percentage-points (20%) more likely to have not received health care when needed during the past year (42% in those with prior incarceration versus 35% in those without prior incarceration; $p<0.015$). Weighted logistic regression models confirmed that incarceration history was significantly associated with unmet healthcare need ($p<.05$). Predicted probabilities ranged from 28-52% among those never incarcerated to 32-66% among those with incarceration histories. Marginal effects revealed that poor self-rated health, low self-rated social standing, and social support from family or friends amplified this association ($p<.05$). DISCUSSION/SIGNIFICANCE OF IMPACT: A history of incarceration was associated with decreased access to healthcare when needed. Translational efforts to reduce disparities in healthcare access among adults with mental illness should include tailored models of care for individuals with incarceration histories.

29 Antibacterial effects of the MEK1/2 inhibitor ATR-002 on Staphylococcus aureus†*

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OBJECTIVES/GOALS: Pulmonary infections by Staphylococcus aureus (S. aureus) are difficult to eradicate in people with cystic fibrosis (CF, PwCF) and remain a significant disease burden. Our objective is to determine if a MEK1/2 inhibitor, ATR-002, can reduce S. aureus biofilm growth and synergize with antibiotics against multidrug-resistant strains of S. aureus. METHODS/STUDY POPULATION: To quantify the ability of ATR-002 to synergize with antibiotics, synergy checkerboard assays examined the effects of ATR-002 in combination with n=11 different antibiotics against the methicillin-resistant S. aureus (MRSA) strain USA300. We next quantified bacterial growth of n=6 antibiotic-resistant CF clinical isolates treated with a combinatory dose of 5 uM ATR-002 and antibiotic to confirm results from the checkerboard assay. Finally, S. aureus biofilms were established using USA300 or n=7 different CF clinical isolates in 96-well plates for 24 hours and then were treated with media, vehicle controls, or ATR-002 (5, 25, or 50 uM) for an additional 24 hours; bacterial biomass was quantified by crystal violet staining to assess the ability of ATR-002 to decrease biofilm growth. RESULTS/ANTICIPATED RESULTS: Synergy checkerboard assays revealed that ATR-002 can synergize with the antibiotics gentamicin and amikacin, but had additive/indifferent effects with clindamycin, erythromycin, nafcillin, vancomycin, doxycycline, daptomycin, sulfamethoxazole-trimethoprim, linezolid, and puromycin. Additionally, two gentamicin/amikacin-resistant CF isolates were resensitized to gentamicin and amikacin with the addition of 5 uM ATR-002. However, CF isolates resistant to erythromycin, clindamycin, and nafcillin could not be resensitized to antibiotics with the addition of 5 uM ATR-002. Biofilms produced by MRSA, and n=3 out of 7 CF clinical isolates tested were significantly reduced by treatment of 50 uM ATR-002. DISCUSSION/SIGNIFICANCE OF IMPACT: Our results demonstrate that ATR-002 can synergize with some antibiotics against MRSA, which is also observed in antibiotic-resistant CF S. aureus clinical isolates, and that ATR-002 can reduce established S. aureus biofilms. Future studies will explore the antibacterial effects of ATR-002 in additional clinically relevant models of infection.

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