ORAL MEDICINE

Oral health in drug-dependent individuals

BACKGROUND

Current data indicate that 12 million life-years are lost as a result of early death or disability caused by opioid, cocaine, amphetamine, and cannabis use. Opioid misuse is encountered worldwide. Drug addiction is a preventable condition that causes problems for individuals as well as society. Evidence is confirming that individuals dependent on drugs have a high prevalence of oral health problems, including generalized dental caries, periodontal disease, mucosal infection, candidiasis, mucosal dysplasia, and bruxism. Some of these problems are caused by the direct effects of the drugs and others are secondary to drug-dependent persons' lifestyle, which includes poor nutrition, poor oral hygiene, misuse of alcohol, and smoking. Health care systems in many countries offer services for persons with drug addiction, but comprehensive oral health care is often omitted from the programs. In addition, the implementation of oral health care programs for these individuals is challenging because they place a low priority on oral health and are often noncompliant with their treatment plan. To facilitate the planning of preventive and curative programs as well as general health services for drug-dependent individuals, oral health status and its determinants were evaluated in persons with opiate dependence coming for methadone maintenance treatment.

METHODS

A clinical study was conducted in 2 methadone maintenance centers in Tehran, Iran. The 2 represented different socioeconomic areas. A dentist conducted an in-person interview with each participant and delivered a clinical oral examination based on World Health Organization (WHO) criteria for the Decayed, Missing, Filled Teeth (DMFT) index and the Community Periodontal Index (CPI). The results for the 217 patients (5 women and 212 men) were subjected to statistical analysis.

RESULTS

Patients' mean age was 43.6 years, with a range from 21 to 79 years. Seventy-three percent were married, 68% were employed, and 87% had more than a primary education. Seventy percent abused opium, with crystalline heroin used by 22%. Opium dependents' mean age was 47 years, but crystalline heroin users' mean age was 35 years. Drug use began at a mean age of 25.2 years (range 11 to 67 years), and the mean duration of opiate dependence was 12.1 years. Current methadone treatment duration was 10.0 months.

Fifty-three individuals (24.4%) were totally edentulous. The mean DMFT was 20.3, range 0 to 28 teeth. The main part of this index was determined by missing teeth, followed by decayed and filled teeth. A higher DMFT score was related to older age. Single and employed individuals had lower DMFT scores. Opium dependents had a mean DMFT of 21.7, whereas that of crystalline heroin dependents was 16. Higher DMFT scores were found for patients who began drug use at an older age and those who had been drug dependent for more years. Multivariate analysis found higher DMFT scores were related to older age and lower socioeconomic status.

Dentate participants' mean DMFT score was 17.8, which consisted in large part of missing teeth. Mean decayed and filled scores were 6.4 and 2.4, respectively. Multivariate analysis returned results similar to those with edentulous patients.

None of the patients had a healthy periodontium, with 66% of the maximum CPI due to shallow pockets, 15% to calculus, 11% to deep pockets, and 8% to bleeding. None of the background or drug abuse variables were associated with periodontal disease related to pocket formation. Factors that were associated with pocket formation in dentate opiate dependents were older age and beginning drug abuse at a younger age, with both groups more likely to develop periodontal pockets.

DISCUSSION

Poor oral health was common among the drug dependent individuals and affected both the dentition and the periodontium. The primary part of the dental caries history was based on missing teeth. None of the patients had a healthy periodontium.

Clinical Significance

Based on the findings of this study, planners should integrate oral health care into their general health services for drug dependency care centers. High-risk patients should be provided with educational, preventive, and treatment programs that focus on restoring and maintaining oral health.

Older drug users and those of low socioeconomic status were at higher risk for oral health problems.

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ORAL/SYSTEMIC CONNECTIONS

Dental treatment and risk for cardiovascular events

BACKGROUND

A transient increase in the risk for myocardial infarction (MI) and ischemic stroke (IS) occurs with acute infections and has been attributed to a change in the systemic inflammation levels. Inflammation is an important component in the initiation and progression of atherosclerotic lesions, with rupture of lipid-rich plaque in the arterial wall associated with MI and IS. Evidence has suggested an association between oral health and cardiovascular events that is focused specifically on chronic dental infections inducing atherosclerosis. Some evidence also indicates that invasive dental treatments (IDTs) may be associated with MI/IS, but the association is controversial because of the small sample sizes, participant selection process, and limited adjustment of confounding factors in existing studies. A robust statistical approach was taken to evaluating the relationship between IDTs and MI/IS using a large Taiwanese study cohort.

METHODS

The Health Insurance Database in Taiwan (National Health Insurance Administration 2014) was used to select patients for 2 analytic approaches: a case-crossover design and a self-controlled case series (SCCS) design. Burn patients were used as a negative control group to evaluate the potential effect of residual confounding. A total of 123,819 MI patients, 327,179 IS patients, and 73,247 burn patients were used for the case-crossover analysis. A total of 117,655 MI patients, 298,757 IS patients, and 84,239 burn patients were used for the SCCS analysis. Conditional logistic regression modeling and conditional Poisson regression models were used to estimate the risks of MI/IS.

RESULTS

Case-crossover Analysis

For MI, the odds ratios (ORs) for IDTs for exposure periods of 3 and 7 days and 2, 4, 8, 12, and 16 weeks showed no statistical significance, being very close to unity. The ORs of IDTs were slightly less than 1 but statistically significant when the exposure periods were extended to 20 and 24 weeks.

For IS, the ORs of IDTs for exposure periods of 3 and 7 days and 2 and 4 weeks were not statistically significant and close to unity. They became slightly less than 1 but statistically significant when length of exposure was increased to 8 weeks or longer.

The sensitivity analysis using burn patients indicated ORs of IDTs within 3 and 7 days and 2, 4, and 8 weeks were nonsignificant and close to unity. When the length was extended to 16 weeks or longer, the ORs of IDTs increased to slightly more than 1 but were statistically significant. The gender-specific results were similar to those for the pooled analysis.

For MI, the ORs of high-risk IDTs for exposure periods of 3 and 7 days and 2, 4, and 8 weeks did not reach statistical significance. ORs were statistically significant when the exposure was 12 weeks or longer.

For IS, the ORs of high-risk IDTs were less than 1 but became statistically significant for longer exposures. When burns were considered, the OR of high-risk IDTs within 3 days was 0.69, but became close to 1 and not statistically significant when the exposure was 7 days or longer.

When the analysis considered only patients over age 50 years, the results were similar to those for the analysis of all patients.

Sensitivity analyses excluding previous comorbidities yielded ORs of IDTs and MI of 1.31 and 1.15 for 3- and 7-day exposures, respectively. The ORs approached unity for exposures of 2 weeks or longer. The ORs for IDTs and IS were close to unity for all periods of exposure.

SCCS Analysis

For MI, the age- and seasonality-adjusted incidence rate ratios (AIRRs) were close to unity for all periods of risk. The IS AIRR was 0.94 for 1 to 3 days after IDTs compared to baseline but became significantly higher than 1 for the other risk periods. AIRRs for burn at each period were close