CT group, 18% failures occurred in 0 to 6 months, 18% in 6 to 12 months, 64% in 12 to 24 months, and 11% in 24 to 60 months. The cumulative probability of survival was 85% for the ART group and 79% for the CT group. Statistical analysis showed treatment had no effect on survival.

DISCUSSION

The cumulative probability of survival for the two approaches was comparable. ART restorations had a slightly higher survival rate, indicating that it is no worse than CT and may be slightly better.

Da Mata C, McKenna G, Anweigi L, et al: An RCT of atraumatic restorative treatment for older adults: 5 year results. *J Dent* 83:95-99, 2019

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CARIES AND SYSTEMIC HEALTH

Veterans with dental caries

BACKGROUND

Dental caries has been ranked as the most prevalent condition of the 50 most common diseases worldwide. This reflects a huge unmet need, which might be somewhat attributable to a lack of access to care and the aging of the population. Dental caries in adults increases with increasing age, which may be related to systemic comorbidities or the use of more medications, among other factors. The Department of Veterans Affairs (VA) keeps comprehensive electronic health records that allow the combined evaluation of those containing dental treatment details and those dealing with medical treatment (inpatient or outpatient), pharmacy records, and laboratory test results. Using these data, various clinical questions may be answered regarding issues that can inform clinical practice and yield better patient care. Veterans who receive dental care through the VA tend to be more dentally impaired and have more medical complexities than the general population. However, the databases allow one to estimate the prevalence of dental caries in a cohort of new continuous and comprehensive care outpatients over the course of 5 years and can help determine if there are relationships among dental caries prevalence, prescription medication use, and medical comorbid conditions.

METHODS

A retrospective analysis was performed using the existing VA data, noting number of teeth treated that had a caries-related diagnosis, outcomes in number of teeth per person, and proportion of patients receiving caries-related treatment. Teeth per person with caries-related treatment were also considered in the light of covariates, such as age, gender, race, ethnicity, physical and mental comorbidities, use of prescription medications, and use of prescription drugs with strong anticholinergic properties.

RESULTS

The study population of 95,850 patients included 14,527 (13.2%) who were edentulous; 92.1% were male. The mean age was 58.7 years. White/Caucasian persons accounted for 73.2%, whereas Black/African American accounted for 21.3% of the sample. The mean numbers of physical comorbidities and mental comorbidities were 3.6 and 1.4, respectively. A mean of 10.6 prescription VA drug classes and 0.6 prescription drugs with strong anticholinergic properties were being taken per person.

The main outcome was number of teeth per person receiving caries-related treatment. Of the 95,850 dentate persons, 58% received caries-related treatment over the 12-month prevalence period. The average was 2.17 teeth per person that received caries-related treatment. The most common was direct restoration (1.55 teeth per person in 48% of the population), followed by indirect restorations (0.16 teeth per person in 10% of the population). Posterior teeth were treated more often than anterior teeth regardless of the treatment delivered. The most common caries-related code for restorations was caries extending into dentin; for extractions, the most common code was caries extending into pulp.

The number of teeth per person that required caries-related treatment increased with age. Those age 55 to 64 years and those age 65 to 74 years had the highest demand for treatment. When mean number of teeth treated per region of the United States was considered, no clear geographic patterns were seen.

The mean number of physical comorbidities for the entire veteran population was 3.6, with the mean number of mental

comorbidities being 1.4. Ninety-four percent had at least one physical comorbidity and 70% had at least one mental comorbidity. Those seen most often were hypertension (65%), posttraumatic stress disorder (47%), depression (46%), lower back pain (45%), diabetes mellitus type 2 (36%), cataracts (33%), osteoarthritis (30%), anxiety (20%), cancer (19%), benign prostate hypertrophy (16%), and alcohol dependency (14%). Comorbidity was not related to any difference in caries related dental treatment.

At least 1 prescription drug was being given to 95% of the population for 30 days or more during the study period. The population used a mean of 10.6 prescription drug classes, with the most common being antilipemic agents, antidepressants, gastric medications, nonopioid analgesics, and nonsalicylate nonsteroidal anti-inflammatory drugs/antirheumatics. The ninth most commonly prescribed VA drug class was opioid analgesics. A mean of 0.6 drugs with strong anticholinergic properties was prescribed per person.

Statistical analysis revealed a weak correlation between several pairs of variables, as follows: age and physical comorbidities, drugs with strong anticholinergic properties and mental comorbidity index, and drugs with strong anticholinergic properties and prescription VA drug class. A moderate correlation was found between prescription VA drug class ad physical comorbidity index.

DISCUSSION

Fifty-eight percent of the new patients in this study population had caries, with a mean of 2.17 teeth per dentate person receiving caries-related treatment. Persons with caries had a mean of 3.75 affected teeth per person. This can be contrasted to the general population, which has a 26.6% prevalence of caries. In addition, taking more drugs and age were associated with caries prevalence. Thus the caries risk is high among these veterans, making caries risk assessment and prevention important concerns for this group of patients.

Clinical Significance

A stronger relationship was noted between the caries prevalence and polypharmacy than between caries prevalence and drugs with strong anticholinergic properties. However, caries prevalence and drugs with strong anticholinergic properties showed a weak association as well. The information detailed in this study can help to improve the quality of care for US veterans.

Jurasic MM, Gibson G, Wehler CJ, et al: Caries prevalence and associations with medications and medical comorbidities. *J Pub Health Dent* 79:34-43, 2019

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DENTIN HYPERSENSITIVITY

Arginine to relieve hypersensitivity pain

BACKGROUND

Dentin hypersensitivity (DH) is characterized as an acute pain that occurs when the cervical dentin surface is exposed through the loss of enamel or gingival recession and loss of cementum. The prevalence rates among adults range from 3% to 98%, with the differences attributable to inconsistent selection criteria for study populations and variations in diagnostic methods. Two prerequisites are needed for DH pain to be experienced: noncarious dentin exposure and contiguous dentin tubule patency from pulp to oral cavity. Therapy for DH pain should interact with the hydrodynamic sequence at the surface of the patent dentin tubules or in the neural transmission pathway, specifically that at the dentin-pulp border. Arginine plus calcium carbonate are naturally available in human saliva but have recently been proposed as a breakthrough advancement in DH pain control. The efficacy of prophylactic products containing 8% arginine to alter hypersensitivity pain was tested.

METHODS

Three European study centers contributed 297 patients with established DH. The patients were randomly assigned to treatment with 8% arginine and calcium carbonate in-office prophylaxis paste and toothpaste (test group) or fluoride-free prophylaxis paste and sodium monofluorophosphate toothpaste (negative control group). Sensitivity was measured using an air blast (Schiff score) and tactile (visual analog scale [VAS]) score at baseline, after a single application of the prophylactic paste, and after 4, 8, and 24 weeks of continuous at-home use of the assigned