

Received Date: 04-11-2022 | Accepted Date: 07-11-2022 | Publication Date: 30-05-2023

Diseases of the nose and paranasal sinuses in patients with chronic renal failure

Omil Karimov

Tashkent State Dental Institute, Uzbekistan

Among the urgent tasks of modern practical otorhinolaryngology, the issues of improving the efficiency of diagnosis and treatment of inflammatory diseases of the nose and paranasal sinuses occupy one of the leading places.

Patients and methods: This cross-sectional study was conducted over a 6-month duration to evaluate the frequency of nasal affection among 68 prevalent hemodialysis patients. Eligibility criteria were age more than or equal to 18 years, patients were scheduled on regular thrice-weekly 4 h sessions of conventional hemodialysis, and adequate hemodialysis sessions more than 6 months before the study with a standard bicarbonate-containing dialysate, using biocompatible hemodialysis polysulfone low-flux dialyzer and heparin as an anticoagulant. We excluded any patients who had diabetes mellitus, active autoimmune disease, advanced liver disease, or malignancy. Moreover, patients with previous nasal or sinus diseases were excluded. All patients were subjected to full history and clinical examination with emphasis on demographic features, smoking, the etiology of renal failure, dialysis duration, vascular access, drug history, history of any diagnosed hereditary or acquired comorbidities, BMI, and blood pressure. ENT examination included close observation of any external nasal swellings, deformities, nasal versus mouth breathing, the color of the nasal mucosa, edema, hypertrophy, polyps, granulations, deviated or perforated nasal septum, discharge, or bleeding. Computed tomography (CT) nose and sinus was done only if indicated, as in patients with epistaxis, nasal obstruction, and recurrent sinusitis.

Results of research: A total of 68 eligible hemodialysis patients (35 males and 33 females), with a mean age of 52.1 ± 13.3 years and a mean hemodialysis duration of 7.9 ± 5.58 years were included. The causes of renal failure were hypertension in 21 (30.9%) patients, chronic pyelonephritis in 11 (16.17%), amyloidosis in two (2.9%), analgesic nephropathy in seven (10.3%), lupus nephritis in two (2.9%), chronic obstructive uropathy in seven (10.3%), polycystic kidney in three (4.4%), and 15 (22.1%) patients of unknown

etiology. Associated risk factors noticed in our studied patients are as follows: 16.2% of patients were smokers, 22 (32.4%) patients were hypertensive, and 26 (38.2%) patients with seropositive HCV. The parameters of the adequacy of hemodialysis were the mean urea reduction ratio of $66.63 \pm 10.21\%$ and mean Kt/V of 1.37 ± 0.26 were parameters of the adequacy of hemodialysis. Regarding medications, calcium dose (mg/day) had a mean of 2363.2 ± 950.3 , the mean of vitamin D dose (mg/week) was 0.92 ± 1.02 , and the mean of erythropoietin dose (IU/kg/week) was 53.4 ± 35.47 . Nasal mucosa was normal in 45.6% of patients, whereas 44.1% of the patients experienced dry nasal mucosa. Only 10.3% of the patients had congested nasal mucosa. Inferior nasal turbinates in most of our patients (44.1%) were pale, whereas were normal in 35.3% and were hypertrophied in 13.2%. Frustrations were found only in 7.4% of patients in the inferior turbinates, although they were found in nearly the double percentage in the nasal septum (14.7%). Most studied patients (77.9%) had normal nasal septum, whereas the most significant finding observed was nasal septum crustations in 14.7% of patients and to a lesser extent the nasal septum deviation and ulceration, with 2.9% each. Only one (1.5%) patient had nasal septum perforation.

Most patients did not give a past history of epistaxis (94.1%). The mean hemoglobin level in patient with no evident epistaxis was 10.5 ± 1.7 g/dl versus 9.2 ± 1.6 g/dl in patients with epistaxis, with a P value more than 0.05. The correlation between epistaxis and all parameters was statistically nonsignificant, except for sex, as none of our male patients experienced epistaxis during our study ($P = 0.034$). Logistic regression analysis, after applying the forward method and entering some predictor variables such as the increase in disease duration, hemodialysis duration, smoking, and ferritin, shows an independent effect on increasing the probability of nasal mucosa abnormalities occurrence, with the significant statistical difference ($P < 0.05$ each). Logistic regression analysis, after applying the forward method and entering some predictor variables such as the decrease in transferrin saturation and albumin, shows an independent

Otolaryngology: ENT Surgery

May 15, 2023 | Webinar

effect on increasing the probability of epistaxis occurrence, with a significant statistical difference ($P < 0.01$ each).

Discussion: Uremic patients display a bleeding diathesis that is primarily due to hemostasis abnormalities, particularly platelet dysfunction and impaired platelet-vessel wall interaction. These patients, however, have a high prevalence of cardiovascular and thrombotic complications, despite the reduced platelet function. Bleeding has been reported in 40–50% of patients with CRF or on hemodialysis. A hospital-based study showed that the risk of attacks of bleeding increased twice in patients with renal failure. Moreover, the removal of uremic toxins after hemodialysis has been shown to improve platelet abnormalities, resulting in a reduced risk of bleeding. These results may match our finding, as only 5.9% of our patient's experienced epistaxis.

Patients with advanced renal failure may show clinical manifestations that affect both the hard and soft tissues. Occasionally, these manifestations may be owing to therapeutic measures that include the following: fluid restrictions; dietary changes; adverse effects of some medications; including antihypertensives, painkillers, diuretics, antidepressants, and anti-inflammatory drugs, which are commonly used in these patients; and dialysis and/or kidney transplantation

patients. One of these mucosal manifestations is dryness. In this study, we observed that the most common nasal manifestations in patients with CRF on regular dialysis are dry nasal mucosa and pale inferior nasal turbinates (44.1% each).

The second common nasal manifestation found in this study is the nasal septum crustations (14.7%), and then hypertrophied inferior nasal turbinates (13.2%), followed by congested nasal mucosa (10.3%). Crustations were founded in 7.4% of the inferior nasal turbinates of our patients, and nasal septal ulceration was found in 2.9%.

Conclusions: The most common ENT manifestations were dry nasal mucosa and pale inferior nasal turbinates and to a lesser extent crustations on both the nasal septum and inferior nasal turbinates. The incidence of epistaxis has been reduced in patients with CRF on regular hemodialysis. Nasal septal ulceration and perforation are the least common ENT manifestation. No cases of olfactory neuropathy were reported in our study. Patients with CRF on hemodialysis should keep their nasal mucosa wet using regular saline irrigation and moisturizing agents such as gel and ointments. Correction of anemia and regular hemodialysis helps in decreasing bleeding tendency in uremic patients.

bonusha-uz@list.ru