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Title: A Gut Feeling on Endotoxemia: Causes and Consequences in Chronic Kidney Disease

Authors: Hauser AB, Stingham AE, et al.

Overview: This review discussed the relationship between chronic inflammation, endotoxemia (ET) and complications of chronic kidney disease (CKD).

Summary:

- Chronic inflammation is closely linked to several complications of CKD such as vascular calcification, accelerated atherosclerosis, loss of appetite, insulin resistance, increased muscle catabolism and anemia.
- Inflammation is a predictor of mortality in patients with CKD.
- Endotoxin release into the circulation is a potential target for intervention to reduce mortality in CKD patients.

Results and conclusions:

- Sources of ET include biofilm on catheters, migration of bacteria and endotoxins across the intestinal mucosa into the circulation (translocation), periodontitis and the presence of *P. gingivalis* endotoxin
- Prevention of ET through treating the sources of ET will potentially reduce the inflammatory response.
- Treating periodontal disease, vascular access and catheter derived infections may reduce complications in CKD patients.

Key take-aways:

This review article discussed the sources of CKD complications, which are life threatening. The sources of chronic inflammation and ET include periodontitis and the presence of the perio pathogen, *P. gingivalis*. The authors indicated that, “Severe periodontitis [is] associated with increased serum hs-CRP concentration in patients after kidney transplantation and it seems to be correlated with [an] increase [in] the risk of patients’ death after kidney transplantation”. The authors concluded by recommending the treatment of the sources of inflammation and ET, including periodontal diseases.

Implementation Strategies:

Reducing the potential complications of our CKD patients is the right thing to do. Therefore, we should be providing these patients with the opportunity to learn what periodontal pathogens are in their mouth by using the science of DNA-PCR. When *Pg* is discovered, appropriate measures should be taken to eliminate the pathogen and reverse any inflammation, if present. It is a good idea to test the significant other as well, to avoid re-infection by transmission. Once treatment is complete, be sure to retest to ensure the desired outcome has been achieved.

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