Journal of Pharmacreations

PharmaCreations

ISSN: 2348-6295

Pharmacreations | Vol.8 | Issue 1 | Jan- Mar- 2021

Journal Home page: www.pharmacreations.com

Research article *Open Access*

Nefrocare tablets: Nutritional Detoxification & Cleansing of body's toxins from internal organs and tissues.

Govind Shukla, C. Subrahmanyam, Akanksha SonalKhess, M.Dayanand, Anusha Kandala, G.Sravanthi, C.J Sampath Kumar

LactonovaNutripharm (P) Ltd, Makers of ***Nefrocare tablets,*** *81/3, IDA Mallapur, Hyderabad, Telangana, India-500 076.*

Corresponding author: Govind Shukla

ABSTRACT

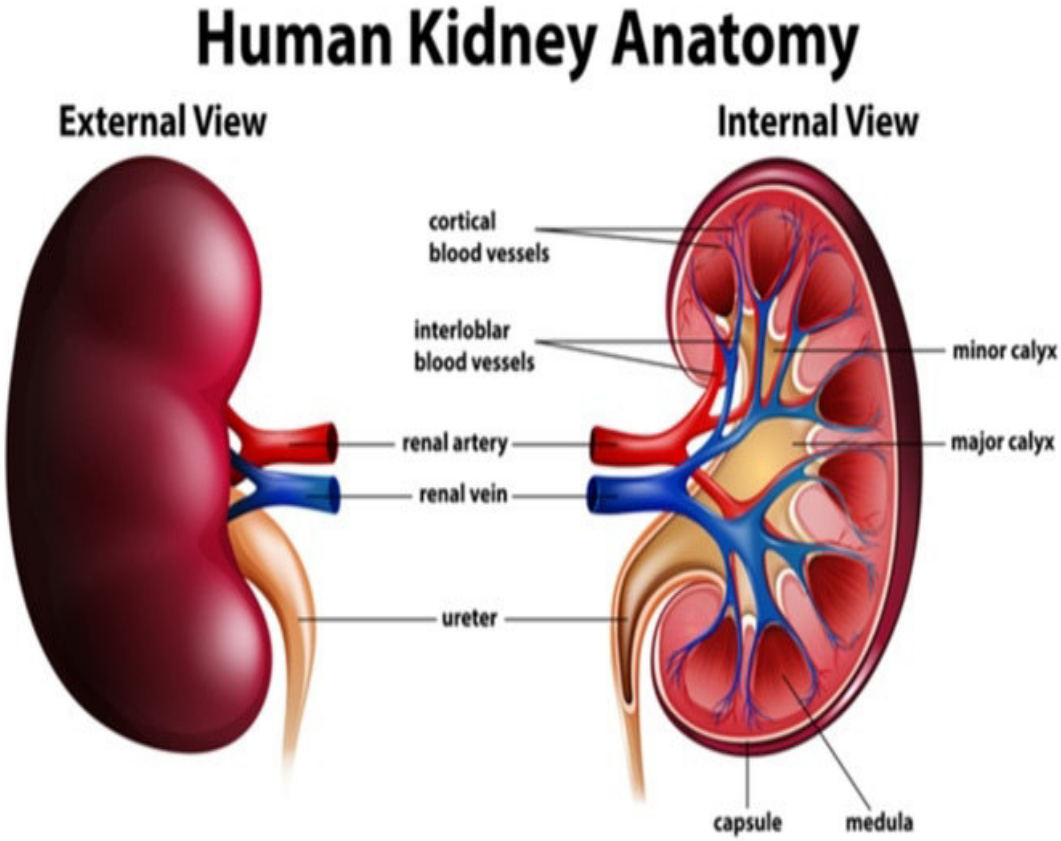
The kidney plays many important roles in maintaining health, ranging from activation of hormones to maintaining stable levels of key molecule in the blood to excretion of toxins. Most consider the kidneys second only to the liver in importance for toxin elimination. However, considering that 20% to 25% of cardiac output goes through these tiny organs, allowing them to filter the blood a remarkable 60 times per day, a case could be made that they are actually more important than the liver for toxin elimination. They rid the body of unwanted products of metabolism such as ammonia, urea, uric acid, creatinine, end products of hemoglobin metabolism, and hormone metabolites; toxins that have been made water soluble by phase 2 in the liver; and direct excretion of industrial toxins, such as heavy metals and a number of new-to-nature molecules. They also excrete nutrients or food constituents when consumed in excess, such as salt, vitamin C, B vitamins, and others.Thepresent Article reviews the role of Nefrocaretablets,helps to protect the kidney from environmental & industrial toxins.

Keywords: Nefrocare tablets, Detoxification, tissues

INTRODUCTION

- **Nefrocare tablet**is a blend of food supplement mainly required for kidney detoxification.
- These beneficial ingredients help to support the intensive cleaning of the tissues.
- The unique combination promotes healthy detoxification.

Kidney Excretion of Toxins

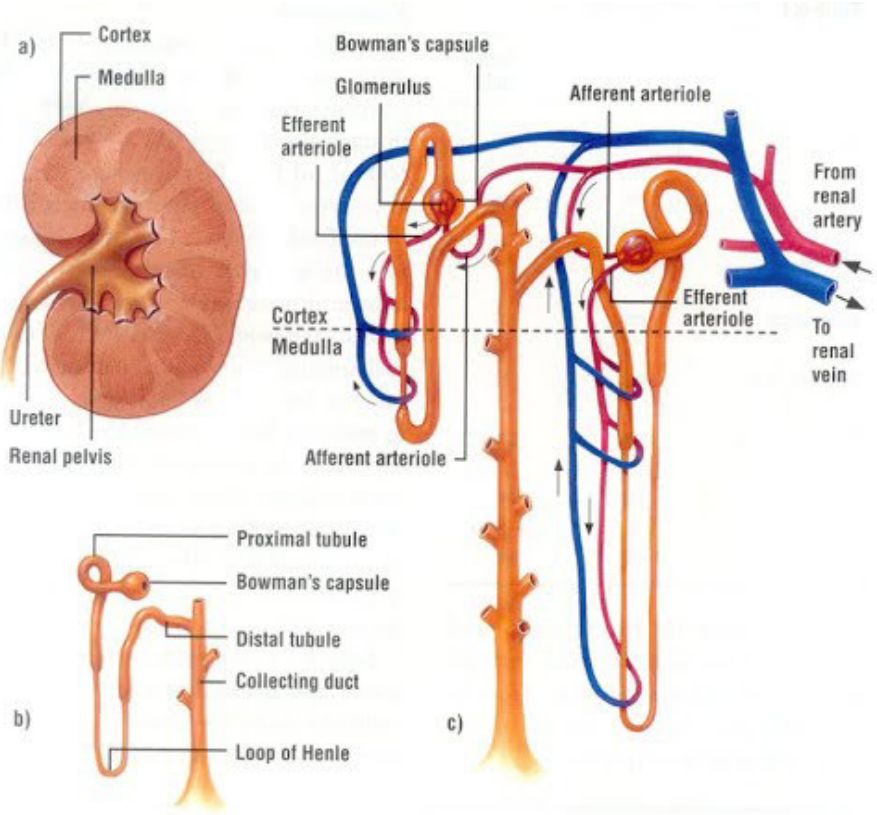


The kidney excretes toxins through essentially 3 mechanisms: (1) filtration through the glomeruli; (2) passive diffusion, typically from the distal tubules; and (3) active processes where the toxins are transported from the blood as well as into the urine.

The glomeruli filter out of the blood almost all of the small- and medium-sized water-soluble molecules. Some are then reabsorbed, such as sodium, to ensure stable levels, blood volume, and other factors. In the proximal tubules are several active, energy-dependent processes such as organic anion transporters (OATs), organic anion transporting polypeptides (OATPs), organic cation transporters (OCTs), multidrug resistance-associated protein (MRP), multidrug resistance protein (MDR), and multidrug and toxic compound extrusion (MATE) that transport specific toxins out of the blood and, hopefully, into the urine. Finally, there is passive diffusion of the more fat soluble toxins across the tubules into the urine. These later process are quite slow but may be important for some toxins.

Several factors determine how well specific toxins are excreted by the kidneys. First, if the toxin is large or bound to protein, it does not pass through the glomeruli, so these have to be handled in other ways. Second, for toxins that are both water and fat soluble (the octanol/water partition coefficient), as their fat soluble increases, they are more likely passively reabsorbed in the distal tubules back into the kidneys and, potentially, back into the blood. Third, the active toxin excretion pathways have limited capacity and can be easily saturated. This limitation is used sometimes to decrease the rate at which an expensive or difficult-to-obtain drug is excreted so higher blood levels can be attained at lower dosages. Finally, as the body uses adenosine triphosphate (ATP) to actively pump out specific toxins, if the kidney's mitochondria are not working well, these active processes do not work as well as needed. Worse, when the mitochondria are not working adequately, the kidneys also cannot protect their own tissue as high concentrations of toxins can that build up in the kidneys.

How the Kidneys Are Damaged



The kidney can be damaged by (1) poor blood flow, (2) mitochondrial dysfunction, (3) overload by high total level of toxins that may not be individually very toxic but become problematic when the total amount is high, (4) indirectly by toxins that cause general tissue damage, and (5) directly by toxins that are specifically harmful to the kidney tissues. These toxins can also come from within, such as from an unhealthy gut and externally from the many metals and chemicals in our industrialized world.

Heavy Metals

Cadmium, chromium, lead, mercury, platinum, and uranium are all nephrotoxic.

CADMIUM

Cadmium is a huge problem. With a worrisome half-life of more than 10 years, it is very difficult to excrete. Cadmium is especially a problem for the kidney, which holds 50% of the total body burden. Once cadmium enters the body, much of it is bound to metallothioniens. These compounds are cleared through the glomeruli but are then reabsorbed by the tubules where they then become stuck. As the metallothioniens slowly degrade, highly toxic free cadmium is constantly released. Although it then passively migrates into the urine, it also causes oxidative stress to the tubules. The cadmium damage to the kidneys helps explain why it accounts for a surprising 20% of osteoporosis. The final stage in activation of vitamin D into its most active 1,25(OH)2D3 is in the kidneys. As the kidneys degenerate, they not only lose their ability to excrete toxins, but now are less able to perform their other functions. The main sources of cadmium are smoking and conventionally grown soybeans. Both are grown with high phosphate fertilizers that are contaminated with cadmium.

MERCURY

The kidneys have a high affinity for mercury. In fact, within a few hours of exposure, 50% of the mercury that gets into the blood ends up in the kidneys. Mercury damages both the glomeruli and the tubules. Much of the tissue damage appears due to poisoning of the kidney mitochondria so there is not enough ATP for the cells to protect themselves from the toxins they are excreting. The main sources of mercury are so-called “silver” fillings, which are actually 55% mercury and eating large fish.

Persistent Organic Pollutants

The persistent organic pollutants (POPs) are new-to-nature molecules specifically designed for special purposes and to be difficult to break down. They range from herbicides and pesticides, to nonstick

coatings, to fire retardants. Many of these chemicals are classified as halogenated hydrocarbons and are so difficult to detoxify or excrete that they have half-lives measured in months to years. Following is a brief discussion of just a few of those with serious nephrotoxicity.

FLUORINATED HYDROCARBONS

Tetrafluoroethylene and similar compounds are polymerized to produce polytetrafluoroethylene (PTFE) polymers, such as Teflon. This class of compounds is used as nonstick coatings on pots and pans; in clothing that is waterproof, but breathable; for stain prevention on carpet and upholstery; and for other purposes. Although these nonstick coatings are supposedly inert, the reality is quite different. When nonstick surfaces are heated to high temperatures on a stovetop, they emit toxic gases.

They damage the kidneys primarily by passive diffusion into the tubules, where they poison the mitochondria. This results in inadequate energy production so active excretion is impaired, increasing oxidative stress as the damaged mitochondria leak highly oxidative high-energy electrons and oxygen and, eventually, cell death resulting in progressive loss of kidney function.6 Other examples in this toxic class include perflurooctanoic acid (PFOA) and perflourooctanesulfonic (PFOS) acid.

GLYPHOSATE

The herbicide glyphosate appears to be a huge problem for the kidneys. It is heavily used in conventional agriculture and around the home under names such as Roundup. Epidemiological research has found a very strong correlation between glyphosate use and the kidney failure epidemic. Of course, association does not prove causation. Animal research shows that chronic exposure at very low dosages causes kidney damage. A 2-year study in rats' drinking water with 0.1 PPB of glyphosate resulted in cellular kidney abnormalities.

Smoking

As would be expected, smoking damages the kidneys. It is high in cadmium and nicotine constricts the blood vessels going into the kidneys, thus decreasing glomerular filtration. It also increases generation of reactive oxygen species and activation of fibrotic pathways in the kidneys.

Nonsteroidal Anti-inflammatory Drugs

Most nonsteroidal anti-inflammatory drugs (NSAIDs) were initially available only by prescription and then became available over the counter when their patents ran out. Many of these now readily available drugs have long-term side effects that are not adequately appreciated by most people. Virtually all safety studies are short term, so many toxic effects are not detected during the research and development stages and are now showing up in population studies. Acetaminophen, aspirin, ibuprofen, naproxen, indomethacin, and COX-2 inhibitors have now all been shown to cause kidney damage when used chronically.

Excessive Salt in the Diet

Another big problem for the kidneys, and some researchers are suggesting may be an important contributing cause to their degeneration, is excessive salt consumption. The 2 to 6 excessive grams of salt the average person consumes every day appears to overload the kidneys enough to impair their ability to eliminate other toxins, especially acidic metabolic waste products.

Excessive Phosphates in the Diet

Research has shown that excessive phosphorous consumption significantly disrupts hormonal regulation of phosphorus, calcium, and vitamin D, causing disordered mineral metabolism; osteoporosis; cardiovascular disease; and impaired kidney function.

Anything that decreases blood flow to the kidneys results in decreased excretion of toxins. Excessive phosphates damage the tubules, increase fibrosis blocking the blood vessels, and decrease glomerular filtration rate. Getting rid of phosphates is a huge problem for the kidneys, with one of the early signs of kidney failure being increasing phosphate levels in the blood.

Why body detoxification is important?

- Due to pollution, tens of thousands of toxic chemicals have been introduced into our environment. Added to this, use of alcohol, tobacco, prescription and illicit drugs has made it a challenging task for the body to get rid of these chemicals.
- Removal of these toxic elements or body detoxification becomes very important for a healthy living.
- The kidney carries the greatest burden of detoxifying the foreign substances that are toxic to the body. It plays a major role in the detoxification of numerous substances in the body, whether these substances come from the environment, from food or formed within the body (from hormones) and other substances).

What is Nefrocare tablets?

- **Nefrocare tablet**is a blend of food supplement mainly required for kidney detoxification.
- These beneficial ingredients help to support the intensive cleaning of the tissues.

- The unique combination promotes healthy detoxification.

Composition of Nefrocare tablets

Each coated Tablet contains-

L-Taurine 500 mg
N Acetyl Cysteine 150 mg

Pharmacological Action of Nefrocare tablets

N-Acetyl Cysteine

- It is a precursor of L-glutathione and eliminates xenobiotics and intestinal endotoxins.

L-TAURINE

- Taurine acts as an antioxidant
- The kidney plays a pivotal role in maintaining taurine balance.
- It prevents lipid peroxidation
- The cytoprotective actions of taurine contribute to antioxidation, energy production, neuromodulation.

Taurine in combination with N-Acetylcysteine useful in attenuating UACR (Urine Albumin-to-Creatinine Ratio)Useful in preventing the deterioration of micralbuminuriaAnd attenuating sTGF-β1 levels in microalbuminuric type 2 diabetic patients.

- Widely used as prophylactic therapy for contrast-induced nephropathy (CIN)
- NAC is safe and well tolerated when administered orally
- Potent antioxidant that scavenges oxygen-free radicals in kidney

INDICATIONS

- **Nefrocare tablets** are indicated for Nutritional Detoxification & Cleansing of body's toxins from internal organs and tissues.
- Diabetic Nephropathy
- Type-II Diabetes
- Contrast-Induced Nephropathy
- Nephrotoxicity

CONTRA-INDICATIONS

Known contraindications to any ingredients of the supplement.

DOSAGE AND DIRECTIONS FOR USE

Take 1**Nefrocare tablet** daily

It is taken preferably with meals or as directed by a physician, licensed nutritionist. or certified trainer

SAFETY

- **Nefrocare tablets**has an excellent safety record in both animal & human investigations, should be considered as a supplement of choice
- **Nefrocare tablets**is generally regarded as safe when taken in the recommended doses; however, mild reactions can include gastrointestinal problems, such as nausea.
- **Nefrocare tablets**is generally well tolerated. Because of lack of long-term safety data, it should be avoided by pregnant women and nursing mothers.

SIDE-EFFECTS

Very Mild Epigastric pain/tenderness, heartburn, diarrhea and nausea, flushing.

SPECIAL PRECAUTIONS

Take **Nefrocare tablets**with or directly after meals to lessen the possibility of gastrointestinal upset.

It should be avoided by pregnant women and nursing mothers.

STORAGE CONDITIONS

Store in a cool & dry place, protected from light.
Keep out of reach of children.

STORAGE LIFE IS 2 YEARS

The preparation should not be used after the expiry date.

SUMMARY & CONCLUSION

Good nutraceutical supplement like Nefrocare tabletswhich is rich in Bioavailable Natural essential nutrients, helps to ensure a healthy, properly functioning detoxification system. In addition, recent research suggests that many of the phytochemicals found in Nefrocare tabletssupports detoxification and are associated with a reduced risk of kidney damage. these compounds appear to induce Phase II enzymes which may inhibit carcinogenesis by detoxification. Induction of Phase II enzymes, such as quinone reductase and glutathione S-transferase, appear to have a protective effect in a number of experimental animal studies. Clinical studies further support the health promoting effects of Synergestic effect of ingredients in Nefrocare tablets.

REFERENCES

1. Frassetto LA, Morris RC, Jr, Sebastian A. Effect of age on blood acid-base composition in adult humans: role of age-related renal functional decline. Am J Physiol. 1996;271(6/2):F1114–F1122.
2. Pizzorno J. Is mercury toxicity an epidemic? (Part I) Integr Med Clin J. 2009;8(1):8–10.
3. Pizzorno J. Is mercury toxicity an epidemic? (Part II) Integr Med Clin J. 2009;8(2):8–12.
4. Canaries in the kitchen: Teflon toxicosis. Environmental Working Group Web site. [Accessed November 16, 2015].
5. Seidel WC, Scherer KV, Jr, Cline D, Jr, et al. Chemical, physical, and toxicological characterization of fumes produced by heating tetrafluoroethenehomopolymer and its copolymers with hexafluoropropene and perfluoro(propyl vinyl ether) Chem Res Toxicol. 1996;4(2):229–236.
6. Groves CE, Lock EA, Schnellmann RG. Role of lipid peroxidation in renal proximal tubule cell death induced by haloalkene cysteine conjugates. ToxicolApplPharmacol. 1991;107(1):54–62.
7. Jayasumana C, Paranagama P, Agampodi S, et al. Drinking well water and occupational exposure to herbicides is associated with chronic kidney disease, in Padavi-Sripura, Sri Lanka. Environ Health. 2015 Jan;14:6
8. Environmental Protection Agency. Basic information about glyphosate in drinking water.
9. Honeycutt Z, Rowlands H. Glyphosate testing full report: Findings in American mothers' breast milk, urine and water. Moms Across America Web site. November 18, 2015
10. De Broe ME, Elseviers MM. Over-the-counter analgesic use. J Am SocNephrol. 2009;20(10):2098–2103.
11. Wei L, MacDonald TM, Jennings C, et al. Estimated GFR reporting is associated with decreased nonsteroidal anti-inflammatory drug prescribing and increased renal function. Kidney Int. 2013;84(1):174–178.
12. McIntyre CW1, Harrison LE, Eldehni MT, et al. Circulating endotoxemia: A novel factor in systemic inflammation and cardiovascular disease in chronic kidney disease. Clin J Am SocNephrol. 2011;6(1):133–141
13. Lin CJ, Chen HH, Pan CF, et al. p-Cresylsulfate and indoxylsulfate level at different stages of chronic kidney disease. J Clin Lab Anal. 2011;25(3):191–197.
14. Wu IW, Hsu KH, Hsu HJ, et al. Serum free p-cresylsulfate levels predict cardiovascular and all-cause mortality in elderly hemodialysis patients—a prospective cohort study. Nephrol Dial Transplant. 2012;27(3):1169–1175.
15. Pizzorno L. Nothing boring about boron. Integr Med Clin J. 2015;14(4):35–48.
16. Chang AR, Lazo M, Appel LJ, Gutiérrez OM, Grams ME. High dietary phosphorus intake is associated with all-cause mortality: Results from NHANES III. Am J ClinNutr. 2014;99(2):320–327
17. Pizzorno L. Canaries in the phosphate-toxicity coal mines. Integr Med Clin J. 2014;13(6):24–32.
18. Calvo MS, Uribarri J. Contributions to total phosphorus intake: All sources considered. Semin Dial. 2013;26(1):54–61.