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Serum uric acid with special reference to Ayurved

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Abstract:

This article talks about serum uric acid and its role in kidney disease. We will look at how high and low levels of this substance in the blood link with Ayurved concepts like dosha, dushya, dhatu, & Mala. High serum uric acid is called hyperuricemia, while low serum uric acid is hypouricemia. Both conditions mainly happen because of metabolism issues in the body. As we know, every disease has a cause. It's often linked to something called mandagni. This idea also applies here.

Materials and methods: *We will explore serum uric acid levels alongside Ayurved using ancient texts like Brihat Trayee Charak, Sushrut, and Vagbhat Samhita. We'll also reference different research articles and books about this topic.*

Observation and result: *Earlier studies show that high uric acid levels often relate to two conditions: gout & nephrolithiasis. In gout, we see problems with shleshaka kapha, kledaka kapha, ranjak pitta, saman vayu, vyana vayu, plus blood impurities (rakta dushti). For nephrolithiasis, it's mostly about issues with apan vayu, mutra kshaya, pachaka pitta, and shleshaka kapha.*

Discussion: *In gout, uric acid builds up in the joints. This means there are problems with metabolism. So there's an issue with saman vayu and pachak pitta since both doshas help digestion. When uric acid gathers in the blood, we also see problems with ranjak pitta. It's important because ranjak pitta aids in making blood—mostly in the liver—and vyana vayu helps with blood flow too. For nephrolithiasis, dryness shows up in the bladder area (basti). Here we see issues with shleshaka kapha because keeping things lubricated is crucial for it. Since this condition affects 'mutra' (urine), there's an issue with apan vayu too since this is where apan vayu resides. Plus, we have problems with both pachaka pitta & saman vayu due to upset digestion (and yep—mandagni is the reason behind many illnesses). Now let's think about guna-dosha sambandha (the relationship between qualities and doshas). With nephrolithiasis showing signs of dehydration or dryness (shushkata), we can link this back to increased roughness (ruksha guna) of vata and decreased smoothness (snigdha guna) of kapha dosha. Pretty interesting!*

Keywords: *serum uric acid, hyperuricemia, hypouricemia*

Introduction:

This is part of tests we do for kidney issues. We'll focus on when levels are too high or too low in blood. Plus, we'll see how this connects with Ayurved and its ideas of dosha, dushya, dhatu, & Mala. When serum uric acid is high, it's called hyperuricemia. If it's low, we call that hypouricemia. Both happen because of problems with how our body works. As we know, the reason for many diseases is "mandagni." This idea fits here too—it's a key factor in both situations according to Ayurvedic texts. Hyperuricemia means there's more uric acid in the blood than normal. Typically, the upper limit is 6.8 mg/dl; anything over 7 mg/dl might cause issues. High levels can come from two main reasons: either the body makes too much uric acid or it doesn't get rid of enough. Often, it can happen due to rapid breakdown of cells (like in hemolysis or tumor lysis), or due to kidney problems, which lower excretion. Having too much uric acid can lead to gout and kidney stones (nephrolithiasis). It might also point to other health issues like metabolic syndrome & diabetes. Low uric acid excretion can be due to acute or chronic kidney disease, acidosis, or low blood volume

Aetiology:

Urate Overproduction:

A diet rich in purines can lead to this issue. Some people have a specific problem with purine metabolism (like HPRT deficiency). Other causes include certain diseases such as polycythemia vera and psoriasis, plus things like heavy exercise and cell breakdown.

Decreased Uric Acid Excretion:

Issues like kidney disease, acidosis (like lactic acidosis), and medication (like diuretics) can affect how well the body gets rid of uric acid. Other conditions like hyperparathyroidism & Down syndrome may play a role too. Hyperuricemia often shows up in gout & nephrolithiasis. In gout, uric acid builds up—this excess comes from improper metabolism leading to urate crystals forming in joints. We can see a connection with vata dosha—there's a blockage happening with these crystals in the joints since they are the main site for vata dosha problems. When there's too much uric acid in the blood, we also see raktadushti—meaning there's something wrong with the blood itself. This connects with vatarakta samprapti; the vata & rakta dosha get messed up independently but affect each other as well. The kidneys handle uric acid mostly during nephrolithiasis, forming stones even! Modern doctors say that three main factors can lead to these stones: acidic urine, dehydration & high levels of uric acid. Diet plays a big part too! Foods rich in purines—like meats and seafood—can increase uric acid levels according to Ayurved. Stale bread aggravates vata dosha; beer and seafood are also culprits since they affect blood and digestion negatively.

Observation and Result:

So remember those issues we talked about? Increased uric acid is mainly seen in gout or nephrolithiasis. In gout, you'll find problems with different types of kapha & pitta doshas along with

rakta dushti—from shleshaka kapha, kledaka kapha to saman vayu; these all get disturbed! In nephrolithiasis? The situation is similar but more focused on apan vayu and mutra kshaya—here too; pachaka pitta and shleshak kapha have issues.

Discussion:

From a modern medical view: Uric acid (that fancy name for trioxypurine!) comes from breaking down purines we eat. Most happens in the liver but also in intestines rich in an enzyme called xanthine oxidase. About two-thirds goes out through kidneys while a third leaves via the intestines. Interestingly, other animals don't have this high level problem as they produce an enzyme called uricase that helps break down urate further into allantoin—a more water-soluble form! Eating plenty of purine foods boosts urate production but let's remember it not only rises from food but also from fast cell breakdown during conditions like rhabdomyolysis. The kidneys are key for excreting urate—when they don't work well enough (due to underfiltering), hyperuricemia will likely happen! In gout cases, stasis means problems exist with choosing & digesting food properly; thus saman vayu & pachak pitta aren't working right either! Uric acid builds up causing complete chaos! Now when thinking about nephrolithiasis—it's all about keeping things flowing smoothly through hydration while loosening up those connections dampened by shleshaka kapha! Do keep in mind that staying hydrated helps avoid issues relating back to such events linked with disturbed agni!

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