

Urine Indican as an Indicator of Disease

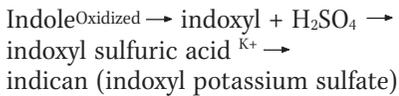
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The urine specimen, although one of the easiest obtained body fluids, is seldom used as an important diagnostic tool.^{1,2,3} The results of a complete urinalysis (even if abnormal) are usually only given a cursory glance by the attending physician, while an elevated serum enzyme test will cause the same physician's eyes to twinkle and the heart to race.

At The Center, the urine sample is a primary diagnostic specimen. Some of the urine tests ordered by The Center's physicians are:

1. 24-hour urine for pre and post chelation (macro, micro minerals and toxic metals)
2. Potassium/sodium ratio (dietary intake of these electrolytes).⁴
3. Pyrroles (physiological and psychological stress).⁵
4. Complete urinalysis and microscopic (where applicable).
5. Urine vitamin C screen.⁶
6. Urine indican (the topic of this paper)

Indican (indoxyl sulfate) is produced by bacterial action on tryptophan in the intestine. Most is eliminated in the feces while the remainder is absorbed, detoxified and excreted as indican in the urine according to the following reaction:



In urine from a patient on a "normal omnivorous diet," the amount of indican excreted is very small. Indican excretion is increased, however, in patients on a high protein diet. Increased amounts in disease results from putrefactive reactions

and is increased with intestinal obstruction, gastric cancer, hypochlorhydria, biliary obstruction, and malabsorptive syndromes. Detection of indican in the urine depends upon its decomposition and subsequent oxidation of indoxyl to indigo blue and its absorption by chloroform.⁷ The test requires a visual interpretation of a color formed in the chloroform layer. The BioCenter Laboratory is fortunate in that one of the authors (SSN) has been performing this test for the past 23 years. Results are graded as:

- negative (clear or slight blue),
- + 1 (baby blue, mint green, yellow),
- + 2 (sea blue, grass green, golden brown),
- + 3 (indigo or deep blue, dark green, or dark brown)
- + 4 (jet black)

At The Center, a negative or + 1 is normal, while +2 or higher are considered toxic and an indication of high levels of bowel putrefaction, problems with intestinal integrity, absorption, protein catabolism or other conditions mentioned above. Some laboratories consider a +1 positive. From a physiological and biochemical aspect, indican production, reabsorption and excretion is very similar to that of urobilinogen.

Case Studies

Records from 22 patients who had a urine indican ordered were examined for provisional diagnosis, urine indican and pyrrole results. Any unusual findings were also noted. These results are shown in Table 1 (p.19) and Table 2 (p.20)

Table 1 shows that 55 percent (10 out of 18 tested), had a "positive" urine indican. As mentioned previously, one diagnostic value of the urine indican test is in de-

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Table 1. Diagnoses, Urine Indican and Pyrrole Results

Age	Sex	Diagnosis	urine indican (neg,+1, +2, +3,+4 <20ng/dL)	urine pyrroles	comments
5	F	allergies, sinusitis	+1	29	"0" urine vit. C
5	F	allergies, sinusitis (twins)	+1	34	"0" urine vit. C
18	F	constipation, acne	+1	33	none
24	F	constipation, irritable bowel syndrome, fatigue albicans antibodies	+1	10	"0" urine vit. C, elevated Candida
35	M	arthritis, iritis, anxiety, chronic fatigue syndrome, depression	neg	23	none
41	M	irritable bowel syndrome,	+1	32	"0" urine vit. C
52	F	constipation, fibromyalgia, chronic fatigue syndrome, back pain	neg	8	Yeast 3+ and positive for Entamoebacoli
58	F	constipation, allergies, yeast fection, headaches, insomnia	neg.	5	Endolimax nana, elevated Candida albicans and Epstein- Barr antibodies
15	F	abdominal pain, fever of undetermined origin	+2	68	ASO titer range 4 times normal range
37	F	rheumatoid arthritis, psoriasis, fever of undetermined origin	+2	18	sedimentation rate 64 mm per hour, low in 6 plasma essential amino acids
47	M	post CVA, metastatic cancer	+2	23	low B ₂ and B ₆ , elevated Candida albicans antibodies
61	M	arthritis, hypertension, allergies, mitral valve prolapse, tremors	+2	10	"0" urine vit. C, low B ₂ , elevated Candida albicans antibodies
67	F	rheumatoid arthritis, osteoarthritis, osteoporosis	+2	26	"0" urine vit. C
23	F	gastritis, edema, irritable bowel syndrome	+3	30	"0" urine vit. C, low in 9 plasma amino acids
35	F	vaginitis, dermatitis, easy bruising	+3	45	"0" urine vit. C., low in 11 plasma amino acids (4 essential), Iodamoeba- butchlii, Blastocystis hominis
56	M	lymphoma, allergies, history of hepatitis and intestinal parasites	+3	40	Endolimax nana, Blastocystis hominis, elevated Candida albicans antibodies
74	F	gastritis, GERD, hypothyroid, depression	+3	15	positive H. pylori anti- bodies elevated TSH
83	F	constipation, ASHD, mitral valve stenosis, macular degeneration	+3	8	low urine vit. C

testing food digestion problems (intestinal integrity, absorption, protein catabolism and bowel putrefaction). If we considered +1 as positive, then 83 percent (15 out of 18) of those tested were positive. Two of the patients with a negative indican test were positive for intestinal parasites and *Candida* overgrowth. Seven of the patients with a +2 or higher were positive for intestinal parasites, *Candida* overgrowth, or evidence of protein catabolism problems (low plasma amino acids). It is also interesting to note that of all the patients with a urine indican of +1 or greater, 50 percent had either a zero or low urine vitamin C. None of the patients with a negative urine indican had a low urine vitamin C.

Data from Table 2 (below) showed there was no difference in the amount of indican in the urine of patients and the number of food sensitivities (28% +1, 28% +2, 34% +1, 32% neg), however, the number of patients (four) may be too small to show any type of trend. In summary, at The Center it is

believed that the urine specimen offers important diagnostic information, whether it is from a routine urinalysis, 24 hour urine for minerals, urine pyrroles, potassium/sodium ratio or urine vitamin C screen.

References

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Table 2. Urine Indican and the Cytotoxic Food Sensitivity Test

Age/Sex	Diagnoses	Urine indican (Neg, +1, +2, +3, +4)	Food sensitivity results Neg, +1 +2 +3 +4					Comments
24 F	constipation, fatigue, irritable bowel syndrome	+1	65	15	9	1	0	intestinal parasites negative, elevated <i>Candida albicans</i> antibodies. 28% positive food antigens
37 F	fever of undetermined origin, rheumatoid arthritis	+2	65	16	6	3	0	intestinal parasites negative, 28% positive food antigens
41 M	gastritis, fatigue, allergies, back pain, irritable bowel syndrome, mitral valve prolapse	+1	59	21	8	2	0	intestinal parasites negative, 34% positive food antigens
51 F	constipation, headaches, fibromyalgia, depression, hypothyroid, easy bruising irritable bowel syndrome	neg.	61	15	13	1	0	intestinal parasites negative, elevated <i>Candida albicans</i> antibodies. 32% positive food antigens.