

Urine Pyrroles in Patients with Cancer

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Introduction

In 1996 Abram Hoffer discussed “positive” pyrroles in the urine of patients with cancer. He postulated that the presence of urine pyrroles may prolong the life of these patients. He showed that cancer patients with pyrroles in their urine lived an average of 647 days after testing, while those with negative pyrroles lived an average of 297 days.¹ It is not clear from the article if a positive pyrrole indicated the presence of any pyrroles in the urine, or if there was a cut-off value used. At the BioCenter Laboratory, we use a cut-off value of less than 20 µg/dL as “normal” and any level above that as elevated.^{2,3} This is also the “normal” urine pyrrole value reported by Carl Pfeiffer.⁴

In the article, Hoffer reported 33 out of 99 (33%) cancer patients had a “positive” urine pyrrole. Seven of 8 lung cancer patients (87.5%) and 2 of 7 ovarian and uterine cancer patients (29%) had “positive” pyrroles. For all other cancers in this study, there were 24 of 79 (30%) “positive” pyrroles. Hoffer also stated that patients with lung and ovarian cancer had the highest incidence of psychotic changes or dementia of all cancer patients.

As a result of Hoffer’s findings, we reviewed data from cancer patients seen at The Center to see if these patients also had elevated urine pyrroles. We found 118 patients (68 females and 50 males) that had a urine pyrrole ordered at the first visit. Their ages ranged from 13 years to 84 years, with an average age of 56.4 years. Using the criteria established for “normal” (less than 20 µg/dL), 61 patients, or 52% (30 males and 31 females) had normal pyrrole and 57, or 48% (20 males and 37 fe-

males) had elevated pyrroles (Table 1, p.42).

The lowest pyrrole level detected in our patients was 3.0 µg/dL (in three different cancer patients) and the highest was 349 µg/dL (lung cancer). Lung cancer patients had two of the three highest urine pyrrole levels, 349 µg/dL and 100 µg/dL, and three out of the top 10 highest levels. The highest urine pyrrole in lung cancer patients was the same as reported by Hoffer. In our group of patients, breast cancer was the most common type of cancer with prostate cancer the second most common. In the past, we did not usually follow up cancer patients with a urine pyrrole test. However, we did follow up the lung cancer patient who had a urine pyrrole of 349 µg/dL. The results showed that three months after treatment with a high-dose intravenous vitamin C protocol, the patient’s pyrrole was 67 µg/dL. Eight months after treatment his pyrrole was 99 µg/dL. At no time did it go below 20 µg/dL.

Comments Concerning Urine Pyrrole

Urine pyrrole is the compound of many names. It has been known as the mauve factor, kryptopyrrole, and has been classified as a 2,4 dimethyl-3-ethylpyrrole.⁵ Abram Hoffer was one of the first to discover the presence of pyrroles in the urine of schizophrenic patients (the “mauve factor”) and correlated this finding with the diagnosis of schizophrenia.⁶⁻¹⁰ We have also discussed our experience with pyrroles in health and disease.^{2,3} Carl Pfeiffer and others reported that about 30% of schizophrenic patients had pyrroluria.⁴ Pyrroluria is by no means limited to schizophrenia. According to Hoffer, about 20% of depressed, anxious, and addicted individuals have pyrroluria, and pyrroluria is common in people undergoing any type of physical and psychological stress.¹¹

Our data confirms Hoffer’s finding that

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urine pyrroles are elevated in many patients with various types of cancer and that lung cancer patients have the highest urine pyrrole levels. However, since cancer would be a cause of great psychological and physiological stress in an individual, it is not unreasonable to expect that they would have elevated urine pyrrole levels. It is interesting to note that in one of our patients the urine pyrrole level decreased significantly after treatment. In the future, we plan on following these patients and correlate the urine pyrrole levels with the treatment protocol and survival time.

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Table 1. Urine pyrroles in cancer patients.

Number	Age	Elevated Pyrroles (number, percent)	Normal Pyrroles (number, percent)	
118	13-84 (range) 56.4 (average age)	57 (48%) Males = 20 (40%) Females = 37 (54%) Range = 20-349 µg/dL	61 (52%) Males = 30 (60%) Females = 31 (40%) Range = 3-19 µg/dL	
Cancer Types (n)	Elevated Pyrroles		Normal Pyrroles	
	Number	Range, (µg/dL)	Number	Range, (µg/dL)
Breast (27)	10	(20-54)	17	(8-18)
Prostate (16)	6	(23-31)	10	(4-19)
Pancreas (9)	8	(20-101)	1	(13)
Lung (9)	6	(25-349)*	3	(4-14)
Colon (8)	5	(21-70)	3	(7-13)

*Lung cancer represented 3 out of the top 10 highest urine pyrrole levels. Other cancers included renal cell (7), lymphoma (7), ovarian (6), myeloma (4), bladder (4), Non-Hodgkin's lymphoma (3), other (18).