Coffee And Its Place In The Overactive Bladder/OAB And Interstitial Cystitis/IC Patients

Probably one of the most controversial fluids imbibed by patients with OAB or IC is the ubiquitous cup of coffee. Over the past three month I have conducted an interesting analysis of coffee from two major suppliers and one specialty manufacturer. Evaluating its effect on a group of twelve (12) patients whose sensitivity to regular coffee has prevented a large percentage of this group to alter or discontinue their consumption of coffee. First, a brief history of the drink and how it has become intertwined into our society and culture.

History

The coffee plant, an evergreen Coffea, originated in Ethiopia and coffee berries were first made into wine. Obviously not very popular but totally expected as humans have tried to ferment any fruit they come across. Sometime in the 15th Century locals began roasting the coffee berries, now called beans, and it became a popular energy inducing drink. After migrating across the Red Sea to the Arabian Peninsula, what is today called Yemen, coffee became the in vogue drink of the elite class. This was part of the Ottoman Empire which immediately saw the potential for trade. The stimulating effect first found its place in the coffee shops which were evolving into a place for political discussion. From that time forward it became a political football. Sometimes banned by the Christians as it was a Muslim drink, then band by the Muslims as it was the site of political discontent.[1]

Obviously, it developed a following as it spread from India to Italy. Monopolies never last. Plants, seeds and roasted or unroasted beans were smuggled out of its origins and spread over the entire world between the Tropics of Cancer and Capricorn. The Spanish in the Americas, the Portuguese to Brazil, Africa and India, the English to the Caribbean Islands, the Dutch to the East Indies and the French to Indochina, to name a few. Different roasting techniques emerged and coffee evolved to what we have today.

Process and Roasting

Coffee beans are picked and dried prior to passing onto roasting. Roasting is the stage that effects the end product more than any other. It takes the complex chemical incorporated in the coffee bean, and through staged roasting, manipulates them to form the complex tastes that make coffee what it is today. Light roasting maintains more aromatic oils and acids plus retaining an elevated caffeine level. Medium roast has the lowest caffeine and acid levels. Dark roasting continues to roast the beans converting sucrose into simple sugars which are then carbonized, accounting for the dark full bodied color and flavor. Full bodied roasting concentrates the caffeine resulting in a higher level than medium roast.

Modern controlled roasting using hot air, as state-of-the-art. This process allows a temperature and time controlled roast. Therefore, controlling the release of oil, acids and caffeine.

Brewing

Even simple steps on brewing alter the chemical composition of the final product. Caffeine levels are reflected below with similar grinds: [2]

Brewed 0.4-0.65 mg/cc
Drip 0.5-0.85 mg/cc
Expresso 2mg/cc

Caffeine levels can be altered by decaffeinated beans which are most commonly done by the Swiss water soaking method or chemical treatment. By removing caffeine, coffee becomes less neurologicallystimulating. Loss of the stimulating effect is a major drawback of the pleasure derived from a good cup of java.

Solutions

Understanding the basic principles of coffee manufacturing allows us to better understand the effects it has on the urological system. Patients with OAB and IC along with IBS (irritable bowel syndrome) are sensitive to the caffeine level in any consumed beverage. Most try to avoid them altogether. With the place coffee occupies in our society as a way to start the morning, sit down and take a break, have a deep conversation with friends, finish a great meal or just to enjoy it for what it is, coffee is an integral part of the human experience. To deprive anyone of that experience is inhumane. Those who, for whatever reason are not willing to make that sacrifice, many options are available.

Decaffeinated coffee is the first attempt to reduce the stimulation on the sensitive bladder. This helps, as numerous studies have shown that this does reduce bladder irritation. Many people are not satisfied with the taste or complexity of the drink. Paying attention to the brewing mechanism has been able to keep chemical concentrations to a minimum. Factoring in the roasting process can also minimize the insulting chemicals. Controlled medium roast offers the lowest caffeine levels along with the least acidity. A quality water supply is just as important as the coffee bean. Well water with its high mineral concentration differs dramatically from reservoir water. To avoid inconsistency bottled water was used in this study, and even this pH varies from 6.0 to 7.1.[3] For consistency, we standardized at a pH of 6.8 prior to brewing.

Results

The main purpose of this study was to evaluate a coffee that follows the scientific principles in coffee production. From bean selection, to drying, to roasting and finally brewing in offering the least offensive product while maintaining the desirable coffee experience. First and foremost coffee is an acquired taste, acceptable substitutions to a previously traumatic experience opens the field to many options. Concern for acid levels and caffeine concentration appears to universally be accepted as the cause for over activity in the lower urological system.

Products from well-known coffee shops were compared to Tylers Coffee ® , whose product meets all the optimal processes toward that goal of a less irritating coffee to the lower GU system. Controlled medium roasting of TripleA Arabica from the American continents results in the lowest acid levels of the tested products.[4] The measurements used by the US Food and Drug Administration to define low acid food is a pH no lower to 4.6. Utilization of higher pH water (7.4 – 8.0) reduces end result of acidity proportionally. These results were compiled with an initial water pH of 6.8:

Tylers Coffee® pH 6.05
Dunkin' Donuts® Regular Blend 5.18 [5]
Starbucks® House Blend 5.53 [6]

The subjective results were the most impressive with twelve patients with known IC or OAB trying all three coffees. Tylers Coffee® being the most tolerable coffee tested with the least amount of side effects, less dysuria, frequency and urgency were consistently noted. Added benefit was a reduction in GERD (gastro-esophageal reflux).

Conclusion

Patients suffering from IC or OAB make many compromises to function in today's world. Coffee one of the small pleasures most of us enjoy without a second thought is deprived from this group. Tylers Coffee offers a logical approach to solve a problem and should be considered an option. A pH meter should be a tool for evaluating the acid base balance of the water used to make coffee for any patient with IC, IBS, or OAB. Even the best coffee beans and roasting processes will not compensate for a more acidic water supply.
Resources:

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[1] Wikipedia®, Wikipedia Foundation, Inc.
[2] Wikipedia®, Wikipedia Foundation, Inc.
[3] Poland Spring® Brand 100% Natural Spring Water, Nestle' Water North America.
[4] Tylers Coffee®
[5] Dunkin' Donuts®, Dunkin' Brands Group, Inc.
[6] Starbucks®, Starbucks Corporation.