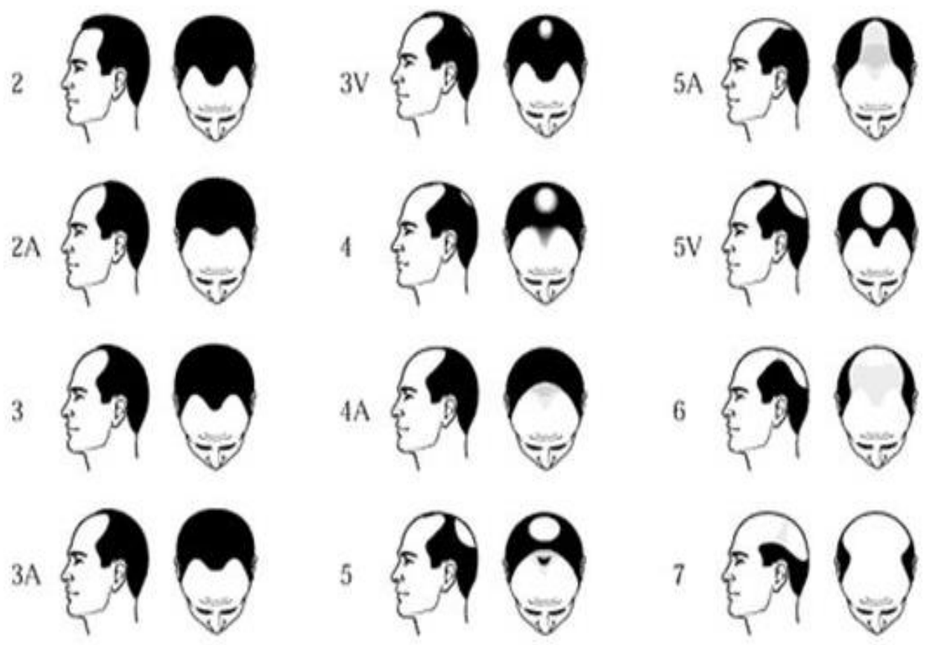
We all get Balder! Alopecia Androgenetica & LUTS

Nassim Aourag, Hans Langenhuijsen,Frank D'Ancona, John Heesakkers

Radboud University Medical Center
Nijmegen, the Netherlands



Introduction

Prostate growth and alopecia androgenetica (AGA) are both under influence of dihydrotestosteron (DHT). The most common etiology of voiding LUTS is an enlarged prostate mostly caused by BPH. Well documented factors in the pathogenesis of BPH and LUTS are aging, hormonal, and genetic factors.

In Caucasian men, the prevalence of AGA is 30% at the age of 30, which increases 80% by 70 years. DHT can make prostates larger and men balder. Alpha-reductase converts testosterone in DTH which contributes to the miniaturization of hair follicles.

5-ARI are effective in the treatment of AGA. Since as well AGA and prostate growth causing LUTS are under influence of DHT, the objective of this exploratory study is to study the association of the AGA baldness score and prostate size. If an association would exist, a baldness score could be predictive of e.g. prostate size or other cause of storage LUTS.

We hoped that with this study we can support physicians in the estimation of the prostate size without using invasive methods.

Methods and Materials

We looked at all subjects undergoing a Green Light Laser (GLL) vaporization of the prostate for male LUTS.

Of 177 out of 822 subjects in this database a personal identifying photograph of the head was available in their electronic patient file that could be used for scoring baldness. To the best of our knowledge, this method has not been used in any prior study.

From these photographs we assessed the rate of hair loss according to the Norwood-Hamilton scale 7-8. For simplification and because precise scoring was difficult the AGA was scored in two categories: < 4 and => 4. AGA score =>4 was classified as bald, whereas lower scores were not-bald.

Were collected age, prostate volume measured by transrectal ultrasound, PSA, IPSS, free uroflowmetry parameters, filling- and pressure flow urodynamics.

Table 1. Various epidemiological LUTS and AGA parameters

	N	Range	Min	Max	Mean	Std. Deviation
Age (yrs)	177	41	47	87	68	7,47
IPSS	108	34	1	35	19	6,18
Prostate Volume (ml)	170	224	21	245	77	37,97
PSA (ng/l)	163	38,7	,30	39,0	4,7	5,4
Qmax (ml/s)	128	24,0	1,0	25,0	8,9	4,9
Qol pre	107	5	1	6	3,84	1,15
Schäfer grade	112	5	1	6	4,19	1,09
Androgenetic Alopecia Score	177	1,00	0,00	1,00	,59	,49

Results

Mean age was 68 (47-87) years. Mean IPSS was 20 (1-35). 45% presented (n = 49) with moderate LUTS (IPSS 8–9) and 53% (n = 57) presented with severe LUTS (IPSS >19). 59% were classified as bald (AGA score). Mean prostate size (range) was 77,5 ml (21-245), mean Qmax was 9 ml/s (1-25), Mean PSA was 4,7 ng/l (0,3 -39).

AGA score correlated with none of the other parameters significantly. PSA and prostate volume correlated with the Schäfer obstruction classification. Qmax correlated with Schäfer classification and IPSS. IPSS correlated with QoL. Schäfer classification correlated with PSA, prostate volume, Qmax and age.

Table 2. Chi square correlation results of the analyzed parameters

		Androgenetic Alopecia Score		Total
		<4 not Bald	>/=4 Bald	
Prostate Volume	< 50 gram	17	33	50
	50-77 gram	20	31	51
	78-100 gram	14	8	22
	>100 gram	19	28	47
Total		70	100	170
Pearson Chi Square 0.125				
Age (years)	< 68	43	51	94
	>=68	29	54	83
Total		72	105	177
Pearson Chi Square 0.144				
Qmax before GLL (ml/s)	<= 6	15	33	48
	6-12	26	29	55
	>= 12	11	14	25
Total		52	76	128
Pearson Chi Square 0.238				
PSA (ng/ml)	0 - 2.5	22	43	65
	2.5 - 5	26	30	56
	5 - 7.5	5	13	18
	7.5 - 10	3	3	6
	>10	10	8	18
Total		66	97	163
Pearson Chi Square 0.273				
IPSS	mild (< 8)	1	1	2
	moderate (8-19)	21	28	49
	Severe (>19	23	34	57
Total		45	63	108
Pearson Chi Square 0.939				

Discussion

We looked at a population that underwent a Green Light Laser procedure. Mostly this procedure is performed in males with bigger prostates. Therefore we could not examine male patients with smaller prostates which could influence the results.

An important aspect can be the scoring of the AGA by the Norwood-Hamilton score. The photos used in assessing the scale of AGA are photographs with a frontal view of the patient, they were not taken specifically to score baldness using the Norwood-Hamilton scale. This made scoring the degree of baldness difficult in some cases because the vertex and temples were not always visible.

It is unknown if any of the subjects underwent a hair transplant, used a hair piece or shaved their head as a hairstyle.

Conclusions

- Face value for estimating prostate size is not high.
- As expected, various LUT parameters correlated well.
- However no significantly association was found between parameters like LUTS, prostate size, PSA and AGA
- Therefore, unfortunately, skipping DRE, which can be embarrassing for doctor and for patient, is not yet possible based on the results of this study.

References

Aourag N, Langenhuijsen H, d'Ancona F, Heesakkers J. Can we predict prostate size by scoring baldness? The relationship of androgenic alopecia and lower urinary tract symptoms. Cent European J Urol. 2019;72(1):39-43. doi: 10.5173/ceju.2018.1889. Epub 2019 Mar 12. PubMed PMID: 31011438;

Barbosa JA, Muracca E, Nakano E, et al. Risk factors for male lower urinary tract symptoms: the role of metabolic syndrome and androgenetic alopecia in a Latin American population. Urology. 2013; 82: 182-188.

He H, Xie B, Xie L. Male pattern baldness and incidence of prostate cancer: A systematic review and meta-analysis. Medicine (Baltimore). 2018; 97: e11379

Guarrera M, Cardo P, Arrigo P, Rebora A. Reliability of hamilton-norwood classification. Int J Trichology. 2009; 1: 120-122.