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## The power of stereotypes. Findings of a pilot study on the psychosocial aspects and quality of life among patients with androgenetic alopecia

### Siła stereotypów. Wnioski z pilotażowego badania dotyczącego aspektów psychospołecznych oraz jakości życia wśród pacjentów z łysieniem androgenowym

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#### Key words

androgenetic alopecia, quality of life, men

#### Słowa kluczowe

łysienie androgenowe, jakość życia, mężczyźni

#### Summary

**Introduction.** Alopecia is an imbalance between hair growth and hair loss, characterised by excessive hair loss. The pathogenesis of male pattern alopecia is very complex. We live in a culture that rewards physical attractiveness, where hair is considered an attribute of beauty, success and strength. In this context, changes in appearance can have negative social consequences. Until now, there has been little research on the psychosocial aspects and the quality of life in men suffering from androgenetic alopecia.

**Aim.** The aim of the study was to present results of the Evaluation of the quality of life in patients with androgenetic alopecia study, conducted on the basis of a modified DLQI questionnaire.

**Material and methods.** The study group consisted men presenting clear symptoms of alopecia. The control group consisted people with no evidence of alopecia. Each patient was asked to complete the questionnaire. Statistical analysis was performed.

**Results.** The first signs of balding among the respondents were on average at 22 years of age. It was observed that the men in the study group were exposed to significantly higher levels of stress compared to the men in the control group. Decreased quality of life was significantly more frequent among men with androgenetic alopecia compared to men with normal hair in all aspects except for difficulty doing sports and working.

**Conclusions.** Androgenetic alopecia can have a negative impact on self-image and quality of life (QoL). According to our research, alopecia affects mostly young men, which, in conjunction with psychological immaturity, may ultimately have a significant impact on their self-esteem and quality of life. On the basis of the presented results, it can be concluded that the negative impact of alopecia on the quality of life of patients, assessed by the DLQI questionnaire, decreases with age. Although alopecia is not a life threatening disease, it may significantly impair its quality.

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#### Streszczenie

**Wstęp.** Łysienie jest to zaburzenie równowagi między wzrostem włosów a ich utratą, charakteryzujące się nadmiernym wypadaniem włosów. Patogeneza łysienia typu męskiego jest bardzo złożona. Żyjemy w kulturze, która premiuje atrakcyjność fizyczną, a włosy uważane są za atrybut piękna, sukcesu i siły. W tym kontekście zmiany w wyglądzie mogą mieć negatywne skutki społeczne. Do tej pory przeprowadzono niewiele badań w zakresie aspektów psychospołecznych i jakości życia u mężczyzn cierpiących na łysienie androgenowe.

**Cel pracy.** Celem pracy było przedstawienie wyników badania: „Oceny jakości życia u pacjentów z łysieniem androgenowym” przeprowadzonego w oparciu o zmodyfikowany kwestionariusz DLQI.

**Materiał i metody.** Grupę badaną stanowili mężczyźni prezentujący wyraźne objawy łysienia. Grupę kontrolną reprezentowały osoby z prawidłowym owłosieniem. Każdy z mężczyzn został poproszony o wypełnienie ankiety. Dokonano analizy statystycznej uzyskanych wyników.

**Wyniki.** Wśród badanych mężczyzn pierwsze objawy łysienia wystąpiły średnio w 22. roku życia. Zaobserwowano, że mężczyźni z grupy badanej byli narażeni na większy stres w porównaniu z mężczyznami z grupy kontrolnej. Wśród mężczyzn z łysieniem androgenowym istotnie częściej niż u osób z prawidłowym owłosieniem stwierdzono obniżenie jakości życia w przypadku wszystkich analizowanych aspektów, z wyjątkiem niemożliwości uprawiania sportu oraz wykonywania pracy. Łysienie miało istotny wpływ na wycofywanie się z kontaktów towarzyskich.

**Wnioski.** Łysienie androgenowe może wywierać niekorzystny wpływ na obraz własnej osoby oraz jakość życia (ang. *quality of life* – QOL). Według naszych badań łysienie dotyka głównie młodych mężczyzn, co przy braku dojrzałości psychicznej może ostatecznie znacząco wpłynąć na ich samoocenę oraz jakość życia. W związku z przedstawionymi wynikami można wnioskować, iż wraz z wiekiem łysienie ma coraz mniejszy wpływ na obniżenie jakości życia ocenianej w zakresie kwestionariusza DLQI. Mimo iż łysienie nie jest chorobą zagrażającą życiu, może znacznie pogorszyć jego jakość.

## INTRODUCTION

There comes a day in most men's lives when they look at their fathers' shiny heads and start to become anxious. These concerns are fully justified, as the problem of alopecia affects a growing number of people in different age groups. Literature reports indicate that male pattern alopecia can have a significant impact on the quality of life of patients and can be strongly associated with very serious psychological problems (1, 2). Balding men are perceived as less attractive in the physical, social and personality sense. Given this stereotype, it is not surprising that some patients with androgenetic alopecia seem to have lower self-esteem, be depressed and more introverted. We live in a culture that rewards physical attractiveness, where hair is considered an attribute of beauty, success and strength. In this context, changes in appearance can have negative social consequences. Until now, there has been little research on the psychosocial aspects and the quality of life in men suffering from androgenetic alopecia. It is not clear whether alopecia is the cause of low self-esteem, depression, introversion and feeling unattractive among patients, or if there are other causative factors prior to hair loss (2).

Alopecia is an imbalance between hair growth and hair loss, characterised by excessive hair loss. The pathogenesis of male pattern alopecia is very complex. Dihydrotestosterone (DHT) plays a very important role in the mechanism of androgenetic alopecia. Based on several scientific publications, it appears that genetic sensitivity of hair follicles to DHT is the most important factor in the pathogenesis of this disease. It is DHT that is the main culprit for receding hairline and thinning of hair on the top of the head (3-6). Among men with androgenetic alopecia, DHT causes miniaturisation of hair follicles and production of gradually weaker hairs (called vellus hair) instead of long, well-colored hairs. This is not only due to a decrease in hair density, but also due to a reduction in thickness of the hair shaft (7, 8). This mechanism is the result of com-

plex biochemical processes occurring in the follicles, in particular the effect of DHT on the production of new hairs in their growth cycle.

Among many other factors affecting hair loss (such as endocrine disorders, fever, stress, cancer), drug use should also be considered. Knowledge among doctors on the pathogenesis of the disease is often limited to clinical observations and is not supported by trichological research which could help understand the cause of alopecia.

## AIM

The aim of the study was to present selected results of the "Evaluation of the quality of life in patients with androgenetic alopecia" study, conducted on the basis of a proprietary questionnaire as well as a modified DLQI questionnaire.

## MATERIAL AND METHODS

The study group consisted of 200 men presenting clear symptoms of alopecia based on the Norwood-Hamilton scale. The control group consisted of 150 people with no evidence of alopecia. Each patient was asked to complete the questionnaire consisting of two parts: Part 1 – proprietary questionnaire and Part 2 – modified DLQI questionnaire. Part 1 of the questionnaire regarded issues related to the patient's age, comorbidities (including scalp diseases, systemic diseases, endocrine disorders as well as connective tissue disorders) and stress levels. Statistical analysis was performed using Stata 12. The significance level was set as  $p < 0.05$ .

## RESULTS

The analysis of Part 1 of the questionnaire shows that the first signs of balding among the respondents were on average at 22 years of age. It was also observed that the men in the study group were exposed to significantly higher levels of stress compared to the

men in the control group (student's t-test). On a scale of 1 to 5, they assessed their stress levels at an average of 3.3, compared to 2.9 in the control group.

The study revealed that balding men think about their baldness significantly more than the men in the control group (student's t-test). 36% of men in the study group reported they constantly think about their problem (control group: 0%), while 46% reported they think about their problem very often (control group: 0%) (Mann-Whitney U test,  $p < 0.05$ ). According to men in the study group, their baldness is an impeding factor in starting relationships, while in the assessment of the control group, it is not a problem. As many as 60% of men in the study group believe that people without alopecia are much more attractive.

The analysis of Part 2 of the questionnaire shows that men presenting with features of androgenetic alopecia reported low mood and difficulty in performing daily activities significantly more often than men in the control group (chi-square test,  $p < 0.05$ ). When asked how often they meet with their friends, there was no

significant difference in answers between the two groups (chi-square test) – the most common answer being “once a week or less”. It should be noted that none of the respondents in the control group linked this situation to their hair problems. When asked “Over the last week, how much have your hair problems affected any social or leisure activities?”, 100% answered “Not at all”. Men in the study group answered “A lot” and “Very much” significantly more often (Mann-Whitney U test,  $p < 0.05$ ) (fig. 1). Also analysed was the impact of the condition of the hair on physical activity. Most men reported doing sports once a week. When asked “Over the last week, how much have your hair problems made it difficult for you to do any sport?”, 100% of men in the control group and 67% of men in the study group answered “Not at all”. In the study group, the answers “Very much” and “A lot” were not significantly more frequent than “A little” or “Not at all” (chi-square test,  $p < 0.05$ ) (fig. 2). It was also noted that the condition of the hair prevented 23% of men with androgenetic alopecia and 0% of men in the control group from working or studying (fig. 3).

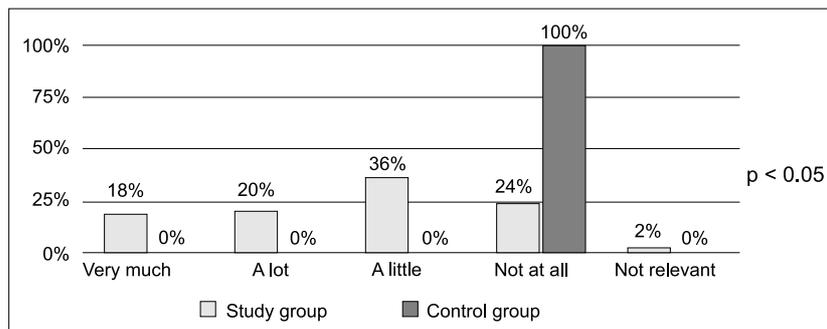


Fig. 1. Over the last week, how much has your hair affected any social or leisure activities?

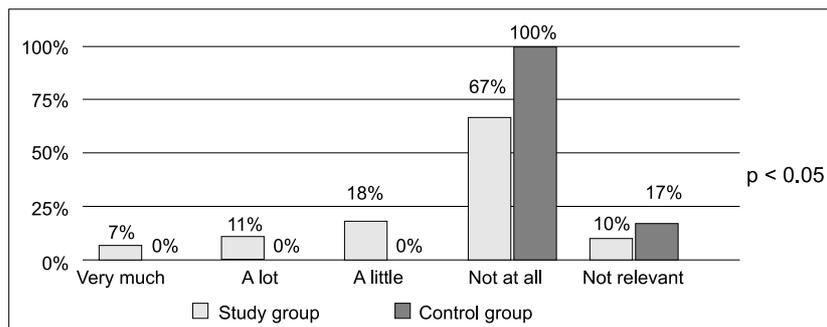


Fig. 2. Over the last week, how much has your hair made it difficult for you to do any sport?

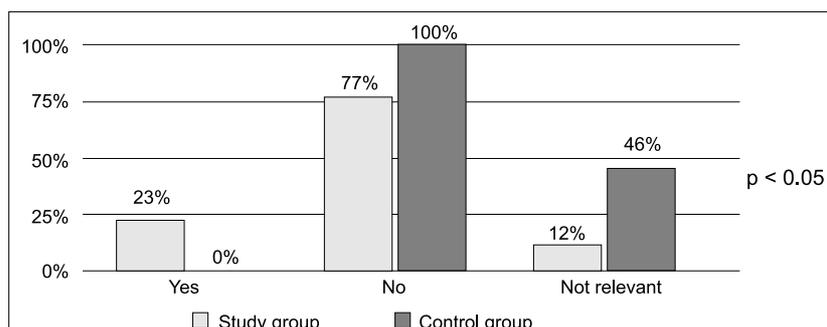


Fig. 3. Over the last week, has your hair prevented you from working or studying?

## DISCUSSION

Androgenetic alopecia can have a negative impact on self-image and quality of life (QoL). According to global reports, the impact can be much more severe if the patient presents with features of diffuse alopecia, is at a young age, was hospitalised for this reason or when the illness is characterised by a chronic course (10). Sawant et al. presented the results of their research – completely different from the conclusions of our study (11). The researchers compared the effect of androgenetic alopecia on the quality of life of men in two age groups. The men were asked to fill the DLQI and SCL-90 questionnaires (SCL-90 – Symptom Check List 90; a self-report questionnaire used to assess psychological problems and psychopathological symptoms). Of the 37 patients studied, 23 belonged to the younger age group and 14 were in the older one.

Between the two groups, no significant differences in lifestyle, eating habits, physical activity and labour or leisure activities were observed. It should be noted, however, that the patients in the younger age group were stronger mentally than those in the older group ( $p < 0.05$ ). In particular, the level of confidence seems to be higher in the younger age group ( $p < 0.05$ ) – which the authors assign to changing social trends and growing acceptance of hair loss. Emotions played an important role in the younger age group, whereas older patients reported worsened social functioning as well as a greater sense of stigmatisation. The SCL-90 questionnaire did not reveal significant psychopathological differences between the two groups. However, the older patients had more mental disorders associated with alopecia, such as depression and obsessive-compulsive disorder. Family history of alopecia was found to be significantly associated with the onset of the problem ( $p < 0.05$ ). The authors conclude that alopecia affects the quality of life in both age groups, with the younger patients being more self-confident and mentally stronger (11). The results of our study led us to different conclusions – the negative effect of alopecia on the quality of life of patients decreases with age.

Reid et al. studied the quality of life (QoL) of 104 patients with alopecia aerata, telogen effluvium and androgenetic alopecia. The researchers compared QoL with subjective assessment of hair loss severity (HLS). HLS was assessed independently by the patient and a dermatologist. The patients rated their hair loss as more severe than their dermatologists. The correlation between the assessment of severity of hair loss and QoL was stronger than the doctors assumed. The researchers have shown that clinical HLS assessment is not enough to draw the right conclusions on QoL in patients. These results suggest that dermatologists should not forget about psychosocial problems and the quality of life of patients when treating androgenetic alopecia (12).

Similar conclusions were reached by Cartwright et al. They studied 214 people with androgenetic alopecia from 4 online support groups. The participants filled, inter alia, a DLQI questionnaire. The results show

several aspects that have an impact on QoL, the feelings of patients in particular. Women reported lower QoL compared to men. Low QoL was associated with strong faith of patients in severe consequences of hair loss (13). Literature reports clearly indicate a loss of self-confidence, low self-esteem and lower self-awareness in people suffering from hair loss (12-14).

### The problem of reduced quality of life in other types of alopecia

Researchers from the United Kingdom presented the findings of a pilot study on self-perception, psychological distress and quality of life among patients with alopecia aerata. It has been shown for the first time that patients with alopecia aerata have a significantly reduced quality of life and high levels of anxiety (15). Fabbrocini et al. have proposed a new questionnaire for patients suffering from alopecia aerata, named AA-QLI (AA – Alopecia Aerata, QLI – Quality of Life Index). Statistical analysis proved higher AA-QLI specificity of assessment of QoL among patients with alopecia aerata in comparison to the commonly used Dermatology Life Quality Index (DLQI) (16). Treatment of those patients, as well as of those with androgenetic alopecia, must be directed to achieve clinical improvement, but should also include psychological support in order to reduce negative beliefs and emotions (15-18).

### Treatment of androgenetic alopecia and improvement of quality of life

Wigs are widely used by patients to camouflage hair loss. However, statistical studies show that wigs do not improve the patients' quality of life. Different results were presented by researchers from Japan. Inui et al. studied the psychosocial benefits of wearing a wig. They conducted the study using a PIADS scale (Psychosocial Impact of Assistive Device Scale), a 26-question survey designed to assess the impact of assistive devices on QLI (Quality of Life Index) perception. The study group consisted of 26 men from Tokio, suffering from androgenetic alopecia and wearing a partial wig. The subjects were aged 40-59 (median age: 49.5). The degree of satisfaction with their appearance during the use of wigs was simultaneously evaluated using a Visual Analogue Scale (VAS). The results have shown that the PIADS sum grew significantly when wearing a wig (Mann-Whitney U test,  $p < 0.05$ ). Improvement of life quality indicators, such as social competence, adaptability and self-esteem, has been observed. Furthermore, the total sum of PIADS results along with social competence, adaptability and self-esteem indicators showed significant positive correlation with the degree of satisfaction in the VAS scale (Spearman rank correlation). Total PIADS correlated positively with the severity of alopecia on the Norwood-Hamilton scale (Spearman rank correlation), indicating that the greater the appearance change with the use of wigs, the greater the effect on QLI (19).

Medline literature review (1997-2013) shows that currently orally administered finasteride and locally admin-

istered minoxidil are the two best methods of treatment of androgenetic alopecia (20-25). Finasteride improves the quality of life even in those patients who did not achieve a clinical improvement (1, 26). Patients should be aware of the potential side effects of the drug on the reproductive system, such as erectile dysfunction and decreased libido (27). The side effects, however, occur rarely and disappear spontaneously in most patients, even without discontinuation of treatment (28).

Finasteride and minoxidil have different mechanisms of action, hence they can be used together (20, 24, 25). Hair transplantation is the gold standard surgical procedure. There are two ways in which donor grafts are extracted: strip excision harvesting and follicular unit extraction. Each method has its advantages and disadvantages, and should therefore be tailored to each patient individually.

In order to achieve a synergistic effect, general and local treatments can be used in combination with surgery. Transplantation can lead to a long-lasting, natural effect of thick hair on the head (20, 21).

### Summary

According to our research, alopecia affects mostly young men, which, in conjunction with psychological immaturity, may ultimately have a significant impact on their self-esteem and quality of life. On the basis of the presented results, it can be concluded that the nega-

tive impact of alopecia on the quality of life of patients, assessed by the DLQI questionnaire, decreases with age (Pearson's correlation).

The study found that the condition of the hair significantly influences the assessment of stress levels and life quality. Decreased quality of life was significantly more frequent among men with androgenetic alopecia compared to men with normal hair in all aspects except for difficulty doing sports and working (Mann-Whitney U test,  $p < 0.05$ ).

A strong relationship between patients' beliefs about their health and quality of life show that health care professionals should consider the psychological aspect in hair loss treatment programs. Although alopecia is not a life threatening disease, it may significantly impair its quality.

### CONCLUSIONS

On the one hand, psychological factors, such as high levels of stress, can lead to the formation or exacerbation of scalp changes. On the other hand, alopecia may impair the patient's self-esteem and contribute to the deterioration of life quality. Hence the task of doctors is multifaceted and holistic perception of the problem. It must be remembered that health is not merely the absence of disease, but full well-being, both physical, social and psychological.

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