GREY HAIR EVULSION TECHNIQUE FOR EVALUATING THE EFFECT OF DRUGS FOR THE TREATMENT OF PREMATURE GREY HAIRS

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An improved method for evaluating the effect of treatment for premature grey hairs is described. The method consists of pulling out all the grey hairs in a patient and counting the number removed. Simultaneously, the converted hairs are also snipped at the grey-black junction and counted. After a gap of 3 months, the survey is repeated to count the number of hairs which have regrown as grey hairs, the hairs which have become grey and also the hairs which have got converted into black during this period. Such surveys are repeated at 3-month intervals over a period of several years to see the progress of greying of hair in an individual and to evaluate the effect of various therapeutic procedures.

Key words : Grey hairs, Treatment, Evulsion.

In the two previous reports[1,2] on the value of calcium pantothenate for the treatment of premature grey hairs, the conclusions were based on actually counting the number of grey hairs which got converted into black. A converted hair, is an unequivocal evidence that a hair follicle which was earlier producing a grey hair is now producing a black hair. This method however, requires two major safeguards. Firstly, some individuals have several grey hairs which get converted into black even without any treatment (spontaneous converted hairs); it is therefore essential to count the spontaneous converted hairs before starting the treatment and compare this with the number of converted hairs which appear during the treatment. Secondly, it is essential to cut away and remove the grey portion of the converted hair to avoid counting the same converted hairs again and again.

This method no doubt is a very reliable and useful method, but it does not evaluate the effect of the treatment on the rate of appearance of new grey hairs. Moreover, in the previous studies, the rate of conversion of the grey hairs to black was found to be slow (often disappointing) in a large proportion of the patients. In a different group of patients therefore, a new method has been employed, (1) to try to expedite elimination of the grey hairs, and (2) to evaluate how far this treatment succeeds in preventing the appearance of new grey hairs.

Materials and Methods

This method can be employed only in those individuals (girls usually) who keep long hairs, and have a limited number of grey hairs. Each patient is required to wash the hair thoroughly with a shampoo and not to apply any oil. The hair are expected to be very clean. On the first visit, the scalp hairs are thoroughly surveyed to spot all the grey hairs and to pull them out from their roots (grey hair evulsion). In addition, the converted hairs, if present, are snipped at the grey-black junction to remove the grey portion. The numbers of grey hairs removed and the (spontaneous) converted hairs are recorded. Simultaneously, the patient starts taking the treatment. Within a week or so, the hairs are surveyed again for any grey or converted hairs which might have been missed during the initial survey. These hairs are also removed and added to the respective counts.

After a gap of 3-5 months, the hairs are surveyed again and the grey hairs and the converted hairs discovered at that stage are classified into the following categories : For classification of these hairs, two presumptions are made, (1) that the hair grows at an average rate of 1 cm per month, and (2) once a hair is pulled out of its hair follicle, it starts regrowing almost immediately irrespective of the phase of growth in which it was at the time of being pulled out. Thus, if a pulled out grey hair starts regrowing as a grey hair (regrown grey hair), it should be grey from one end to the other and its length would be less than 3-5 cm depending upon the time interval elapsed since its evulsion. If an evulsed grey hair regrows as a black hair, it will not be spotted. If a previously black hair gets converted into a grey hair (new grey hair), the distal portion of the hair will be black while its proximal part (less than 3-5 cm in length) will be grey. If a hair has a proximal grey portion which is longer than the calculated length of the part grown during this period, it is presumed to have been missed during the previous survey and is thus labelled as a missed grey hair. Similarly, if a grey hair has a proximal black portion which is less than 3-5 cm in length, it is labelled as a new converted hair, and if the length of the proximal black portion is more than the calculated length of hair grown during this period, it is designated as the missed converted hair (Fig. 1).

NEW GREY HAIR

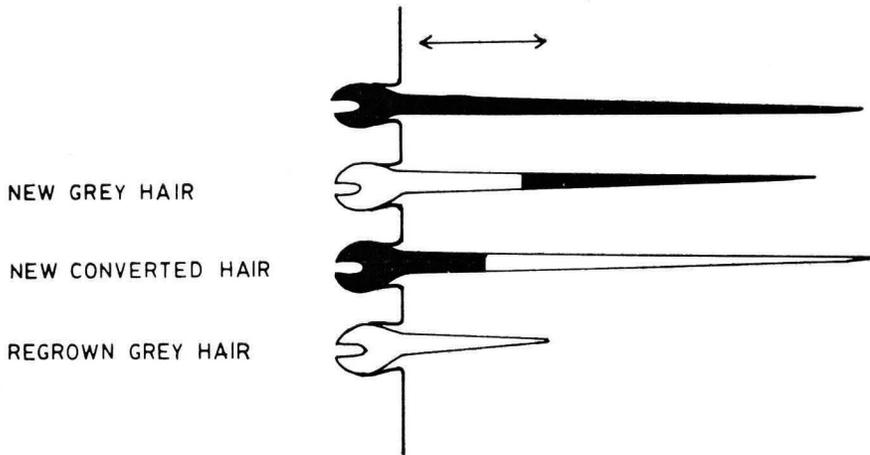NEW CONVERTED HAIR

REGROWN GREY HAIR

Fig. 1. Classification of different types of grey and converted hairs during follow up.

During the second survey, all the regrown grey hairs, the new grey hairs and the missed grey hairs are evulsed, while the new converted hairs and the missed converted hairs are snipped at the grey-black junction. As in the first survey, the patient is checked once again within a week or so, to complete the survey. After another gap of 3-5 months. a third survey can be undertaken to evaluate the effect of the continuing treatment.

From the data collected in this manner, the following parameters can be studied :

1. Percent regrowth as grey hairs : This is to be calculated from the number of grey hairs evulsed during a particular survey and the number of regrown grey hairs counted in the subsequent survey. A 100% regrowth of grey hairs would mean that every grey hair that was pulled out has regrown as a grey hair. Any percentage less than 100% would mean that all the evulsed grey hairs do not regrow as grey hairs; the remaining number of hairs have either not grown at all or they have regrown as black hairs. This parameter provides an indication as to how many

hairs will regrow as grey hairs if 100 grey hairs are pulled out. In a continuing study with more than 2 surveys, the grey hairs evulsed during a particular survey include, (1) the regrown grey hairs, (2) the new grey hairs, and (3) the missed grey hairs. In the subsequent survey therefore, the percent regrowth of grey hairs should be calculated from a sum of the previously mentioned 3 categories.

2. Percent rate of converted hairs : This indicates the proportion of converted hairs, out of the total grey hairs present at any particular time, and is to be calculated as a percentage of the converted hairs detected during the survey of hair and the missed converted hairs detected during the next survey, compared to the total number of grey hairs removed at the time of survey and the missed grey hairs detected at the next survey.

3. Rate of appearance of new grey hairs : A total of the number of new grey hairs detected at a survey and the missed grey hairs detected at the next survey per unit time would provide an indication of the rate of appearance of new grey hairs.

4. Total grey hair number : This is to be calculated by adding the number of new grey hairs, the missed grey hairs and the regrown grey hairs detected at the time of the survey.

Table I. Actual record of a patient undergoing treatment for premature grey hairs with calcium pantothenate and grey hair evulsion.

Name : P,   Age and Sex : 19F,   Duration : 3 years,   Family history : Nil

Date	Total grey hairs removed	Total converted hairs
12.5.82	44	2
15.5.82	3	—

Treatment : Calcium pantothenate 200 mg daily,   Date : 12.5.82.

Date	Missed grey hairs	Missed converted hairs	New grey hairs	New converted hairs	Regrown grey hairs	Remarks
16.8.82	3	—	1	—	21	
21.8.82	1	—	—	—	—	
11.9.82	—	—	—	—	1	
11.12.82	3	—	1	1	6	
18.12.82	—	—	—	—	—	
2.7.83	—	—	5	0	3	
5.11.83	—	—	5	—	3	
4.2.84	—	—	—	—	2	
5.5.84	—	—	1	—	2	
4.8.84	—	—	2	—	2	
17.11.84	—	—	1	—	—	

This value at subsequent periods of time decides whether the individual is improving or not. From the patient's point of view, this is the most important parameter.

Results

A detailed record of one of the patients followed-up for a period of approximately $2\frac{1}{2}$ years is shown in table I.

Comments

This method is time-consuming because the investigator has to spend at least 30 minutes per patient per survey. It is also essential that the patient cleans her hair thoroughly and does not smear the hair with oil at the time of each survey, otherwise a large number of grey or converted hairs are likely to be missed. Shampoos clean the hair far better than the soaps. Nevertheless, this approach is the most reliable method for evaluating the progress of greying of the hair in a patient.

References

1. Pasricha JS : Successful treatment of grey hairs with high dose calcium pantothenate, Ind J Dermatol Venereol Leprol, 1981; 47 : 311-313.

2. Pasricha JS : Further studies on calcium pantothenate in grey hairs, Ind J Dermatol Venereol Leprol, 1982; 48 : 185.