



## Gene Tests for Porphyria: what they can and cannot do.

Talk by Professor George Elder of Cardiff, to the BPA AGM 2005.  
Summarised by K.M. Chamberlayne.

Of the inherited types of porphyria, there are three main types, AIP, HCP and VP. In all three, inheritance is in an autosomal dominant pattern. Two versions of the gene are found in every cell, but the porphyria gene will over-ride the "normal" gene. This means that, on average, children who have one parent with the porphyria gene have a 50-50 chance of inheriting it. (This is the average in the population, not the predicted rate for a particular family.)

Of those people with the gene, there is 20% penetrance – only about 20% (1 in 5) have symptoms.

The French blood donor service did a large-scale survey, and found 1 in 1700 had AIP (the most common of the inherited porphyrias). It is likely that we have a similar rate in the British Isles, though we know of far fewer. (This is many more than previously estimated.)

### The gene is the code for an enzyme.

The faulty, porphyria version makes the enzyme only 50% efficient (only half the normal).

Because genes are so long, there are 10,000 sites on the "AIP" gene which could be "wrong", causing AIP. Since most families with AIP have their own version, someone who is known to have AIP has to have a genetic test to find which mutation (fault) they have. Only then can the rest of the family be tested. At the moment, it takes about three months to identify the faulty part of the gene, and then about two weeks to identify a new family member with the same faulty gene. (The government is setting targets on these, and the hope is to bring the three months down to two.)



**Of the people known to have porphyrias**, the mutation is identified in 95% with AIP, more than 98% with VP, 85% with HCP and 80% with EPP. It is not known why it is sometimes impossible to identify what is faulty; there may be abnormalities in parts of the gene which are difficult to investigate. If the mutation is identified, then tests can be run on other family members, to identify those who have or have not been affected. These are effective at any age, unlike the old tests. Usually white blood cells (obtained from an ordinary blood sample) are used, but cheek cells (from the inside of the mouth) can be used.

### Gene tests cannot:

- 1 tell whether symptoms are caused by porphyria
- 2 exclude porphyria, unless the family mutation is known
- 3 predict the severity of disease
- 4 predict the risk of getting symptoms (except in EPP – the EPP gene in one parent and a special type of "normal" gene in the other gives each of their children a 25% risk of symptoms)

### What about George III? Can gene (DNA) testing solve the problem?

Some researchers were able to open some graves and get DNA from his descendants in Europe, but no mutation known to cause porphyria was found.

Whole DNA is very difficult to find in remains, because of decay.

The only possible solution would be to get some of George's DNA and test it!

## QUESTION & ANSWERS

with Prof. Elder and Dr Stewart  
(Hope Hospital)

- Q. A member who volunteered as a blood donor was turned away by the blood transfusion service. Is there any good reason for this?*
- A.** It shouldn't happen – there is no good reason why a porphyric should be refused.
- Q. Is damage to veins normal, when haem arginate treatment has been needed?*
- A.** Very common. In fact it is sensible to have a permanent connection inserted for IV treatments (Portacath or similar), to avoid damaging veins further.
- Q. Why is there no consultant in N. Ireland?*
- A.** Unfortunately, it needs someone with an interest in the subject. Others are aware of the problem and trying to interest someone in treating porphyrics.
- Q. Often, it can be difficult to get appropriate treatment in A&E. Is there any way round this?*
- A.** It can be very difficult if the admissions staff have no experience of porphyria. Someone in pain and asking for opiates is bound to raise suspicions!  
Carrying a Medic Alert pendant or bracelet can help, plus a drugs list. Ideally, patients should be able to admit themselves to a hospital ward where they are known and their treatment is understood, as patients usually know the difference between porphyric pain and other types. Unfortunately this is very difficult to arrange.
- Q. Travelling abroad can be very expensive on insurance.*
- A.** This has been a problem for many who only have a latent porphyria, and it shouldn't be. Writing "Latent AIP" should be enough to show that you don't have a problem. However, there is a tendency to imbibe a little too freely on holiday and provoke an attack!
- Q. Does AIP cause a raised temperature?*
- A.** No, there must be some other cause.

## HORMONE SUPPRESSION FOR ACUTE ATTACKS

Lynn was diagnosed in her late teens with **Variegate Porphyria**. She had a very bad attack and, though it took some time, this led to the diagnosis. Her family hoped that she would have no further attacks, but this was not to be. In the ten years since, she has had attacks about every two years, usually in the summer months. Her family also noticed that the attacks started around the end of her menstrual cycle, and that she was regularly unwell at the same time of the month.

Her consultant decided that this was worth investigating and she had to collect urine samples every other day for over a month, to be tested for porphyrins. The samples had to be wrapped in foil to keep them dark, and then frozen to prevent them deteriorating. A special box had to be kept in the freezer, so she could store them to deliver to the lab in weekly batches. Fortunately no-one mistook them for ice lollies!

The results showed a definite fluctuation in porphyrin levels over her cycle – a fairly common pattern in female porphyrics. So the consultant referred her to a gynaecologist, to discuss hormone suppression (GnRH inhibitors). She decided to go ahead with this and the gynaecologist prescribed the first injection, which lasts a month, and wrote to her GP about follow-up injections. They have to be repeated very promptly, or the normal cycle reasserts itself.

Unfortunately, the injection caused the worst type of menopausal symptoms. She got such severe night sweats that she had difficulty getting enough sleep, something which did not surprise her mother, after her own experience of the menopause. Lynn's GP prescribed oestrogen patches, which helped a bit, but she was glad to go back to the gynaecology clinic for advice on higher-dose, constant level HRT pills.

These helped a lot and she decided to go onto the three-monthly injections of GnRH inhibitor (fewer trips to the doctors), still with the HRT, and she has now been on the treatment for about 10 months. It seems to be helping to lower her porphyrin levels and she has been able to put on some weight – she was rather under-weight before. She also got through the summer without an attack, even though it is two years since the last one. However, it has not been as helpful as she had hoped, as her general health is still rather shaky.

There seems to be a great deal of variation in the individual reaction to this treatment. Others have commented that it didn't work at all, and some people need HRT but cannot tolerate it. So it may be useful, but the only way to find out is to try it and see.

## LEAFLETS AND POSTERS

June 1st is National Porphyria Awareness Day. We are enclosing a couple of posters for you to use on or around 1st June.

Even if you only put one in your front window, it will help raise awareness. If you need more posters let us know.

BPA is producing a series of leaflets about porphyria. Our first two are included with this newsletter. One is a general one about porphyria, and the other is about BPA (suitable for using for fund-raising). We are giving you two of each - perhaps one for you to keep, and one to give your GP. We have printed plenty, so if you want any more, please let us know.

**For more posters or leaflets, contact us by email: [chair@porphyria.org.uk](mailto:chair@porphyria.org.uk), or our help-line phone.**



## MALARIA - prevention & treatment.

**If you are going abroad for a holiday, it makes sense to check with your GP if you need extra vaccinations, or if there are drugs you should carry. There is no known problem with vaccinations, even with the acute porphyrias (AIP, VP, HCP and ADP). The drugs you are most likely to need are those to prevent malaria.**

Malaria is caused by a small organism "caught" through mosquito bites. All four varieties of malaria cause recurrent illness. It is thought that the Roman Empire collapsed because too many soldiers caught malaria and there was no effective treatment.

Up to 14 days after infection, there is tiredness, aching and sometimes nausea, followed by a bout of serious illness - shivering (ague), then a very high temperature, then profuse sweating - lasting 8 to 10 hours. The person starts to feel much better for a while, but the bout recurs every one to three days (depending on the type of malaria).

**So it makes sense to take precautions to avoid bites:**

- Visit during the **dry season** (fewer mosquitoes as they need water to breed)
- Stay in **towns** (less pools of water around, hopefully)
- Cover up your arms and legs at sunset (when the mosquitoes come out)
- Use **insect repellents** on your skin and in your rooms at all times.

**Mosquito coils** are also good.

Use a **mosquito net**, impregnated with insecticide (this lasts about 6 months – check the label). Some chemists and outdoor shops stock the nets, or will order them for you.

**In addition**, you can take drugs regularly to prevent malaria, from a couple of weeks before your visit to a couple of weeks after. Unfortunately one drug, chloroquine, is no longer effective in some areas as the local strain of malaria has become resistant to it. So this needs to be discussed with your GP. Also some of the possible drugs are not safe for acute porphyrics.

**Alternatively**, you can carry quinine sulphate tablets and dose yourself promptly at the first sign of malaria, though you should also see a doctor as soon as possible. Quinine is safe for those with acute porphyrias.

**Further information for your GP** (and for you, if you know medical terms) [www.uq.edu.au/porphyria](http://www.uq.edu.au/porphyria) "A Guide for People with Porphyria", page "Prophylaxis and Treatment of Malaria".

**Having done everything sensible, enjoy your holiday!**

# BPA Committee Meeting

at Castleford in February.

**We had a very useful meeting, with several important decisions taken. Many thanks to those members who came along to help us decide, and to listen to the talks.**

The first important decision was the **final version of the new logo**, which you can see on the heading. The original black-and-white version, by Rachel Chamberlayne, used the basic shape of a porphyrin molecule. Daniel Wentzell (our former newsletter compiler) worked on a colour version to give it more impact and John Chamberlayne did a final adjustment. Many thanks to all three of them. The logo was approved unanimously by everyone there.

The second important decision was on **leaflets**. We had draft copies with different paper, font and layout, and chose those we thought best. We hope to have the first batch of leaflets ready for National Porphyria Awareness Day, to help with publicity.

We also talked about the **Open Day at Cardiff University Hospital, on Saturday 3rd June**, which Dr. Mike Badminton is organising.

The next **committee meeting is on June 17th, at Buckden Millennium Hall** near Huntingdon, starting at 1 p.m. We hope to have a talk by Prof. Cox (yet to be confirmed), followed by a buffet tea. Details will be on our web-site, and sent out to those who live in the area.

Our next **AGM is at Queen Mary's Hospital, Sidcup (close to the M25) on 14th October, 2006**. As usual, the AGM will be in the afternoon, followed by a talk and a buffet. Our speaker this year will be Dr. Robert Sarkany from St Thomas's Hospital, who has a special interest in the skin porphyrias.

**TALKS:** After the Committee Meeting, we had short talks from Pam Davies of CLIMB (Children Living with MetaBolic diseases) the organisation which helped to set up the BPA, and Melissa Winter of the Genetic Interest Group (GIG).

**CLIMB** was started 24 years ago, mainly through the efforts of one family, and now has information on more than 730 metabolic diseases available to members, including the porphyrias. They have a web site with summaries. They also provide many types of support, including help with accessing services, holding conferences and meetings, giving small grants, and funding research.

In contrast, **GIG** was set up about 17 years ago by a group of organisations like CLIMB who were concerned about having enough influence on parliamentary policy. (BPA is now a member.) It has grown from a purely voluntary organisation to one with 10 paid staff, focusing on policy, access to care and the use of advances in services and treatment. The director represents GIG on several committees, including the approval of Orphan drugs (such as haem arginate), and GIG has been pushing for faster approval of useful drugs. GIG has also been working with genetic knowledge parks, trying to increase awareness of genetic disorders, as well as being involved in the Jeans for Genes appeal.

Both organisation are very useful and deserve our support. Many thanks to Melissa and Pam for their time and their support of the BPA.

**National Porphyria Awareness Day:** After a break for tea, we had a discussion on what to send to members for use on or around NPAD. Though most suggested activities raise funds, **our main aim, as always, is to raise awareness of the porphyrias.**

## PATIENT OPINION...

**PATIENT OPINION is a new website where patients can share their experience of hospital services and rank particular aspects of care. It is free to any member of the public and covers all acute hospitals in England.**

It has been set up as an independent, not-for-profit social enterprise, the costs of which are covered from subscriptions to Trusts and PCT's who use the anonymised comments and patient feedback to then improve services. This means that Patient Opinion will always be independent and not dependent on any single funder.

It is a major new platform by which the patients voice can be made more audible and more powerful. It is also deliberately structured to share the NHS values of mutuality and support. For it to succeed they need patients to log in and to use the site.

There is lots of official information about the NHS available on the internet regarding trusts which got 2 star rating and what MRSA infection rates are, but what people often want is to find out what other patients thought of local services. If you have got to go and see someone about porphyria then it would be nice to know how previous patients with porphyria rated the service at a particular hospital.

You can access Patient Opinion at [www.patientopinion.org.uk](http://www.patientopinion.org.uk) or if you have not got access to the internet but still want to share your story phone 0845 113 0012 and tell them what happened to you or someone you care for. The hope is that this will help to make the NHS better.



## ALEXANDRA ROSE DAY RAFFLE

The Alexandra Rose Day Charity, established in 1912, is a national charity whose sole aim is to help smaller charities to raise funds. They do this by holding a raffle in the autumn each year. They have no clients of their own.

Smaller charities like ourselves, are able to order raffle tickets to sell to our members, friends, and colleagues. The tickets come in books of five and each ticket costs 50p.

The first three prizes are £2000, £1000 and £500 in cash, plus 10 runners up prizes of £25 each.

### HOW DO WE BENEFIT?

We pay to the Alexandra Rose Day organisation just 20% of the ticket sales, whilst keeping 80% for our funds. So if we are able to sell 500 books of tickets at £2.50 per book, we will make sales of £1250, out of which we will keep £1000 for our funds.

As soon as we receive the tickets we will send each member one book. Please return the stubs from sold tickets to our treasurer together with a cheque or postal order made payable to The British Porphyria Association.

If you are unable to sell the tickets, please return them to us anyway.

## Cardiff Open Day

Saturday 3rd June

details enclosed

(also on our web-site)

[www.porphyrria.org.uk](http://www.porphyrria.org.uk)

# HELPLINE CONTACT TIMES

Would members please note that our helpline is not manned at specific times, due to work and family commitments.

As a guideline please try to phone during the following hours, when someone is most likely to be in attendance. Outside of these hours the answer machine will be in operation.

**TEL: 01474 369 231**

**Monday** 19.30 hrs – 21.00 hrs  
**Tuesday** 12.00 hrs – 14.00 hrs  
**Wednesday** Answer machine only  
**Thursday** 14.00 hrs – 15.30 hrs  
**Friday** 10.00 hrs – 14.00 hrs

**Weekends & Bank holidays** Answer machine.

Please leave name, phone number, day and time of message and someone will call you back as soon as possible.

The BPA Newsletter is published by the BPA twice yearly.

**Chairman:** John Chamberlayne  
**Treasurer:** Anne Newton  
**Secretary:** Sarah Pepperdine  
**Patron:** Prof. Timothy Cox, Prof. George Elder

[www.porphyrria.org.uk](http://www.porphyrria.org.uk)

E-mail: [helpline@porphyrria.org.uk](mailto:helpline@porphyrria.org.uk)

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## Fund Raising and Donations...

### SPONSORED WALK

Brendan Morrison and his daughter Chelsea, did a 15 mile sponsored coastal walk and raised £380 for the association. Brendan's wife, Hayley would like to thank his colleagues who showed great support with their generous sponsorship. The BPA would also like to add their congratulations and thanks to Brendan and Chelsea.

### Buy.at/BPA

We have received commission from purchases made at our web shop: Buy.at/BPA and would like to thank all of those who made purchases in this way. If you have not visited the web site, please take some time to have a look. Through the web shop you will have access to famous names like M & S, MFI, Sky, John Lewis, Littlewoods, Amazon, Carphone Warehouse, Cotton Traders and many more retailers, each declaring how much commission they will pay to our good cause through your purchases. It is easy to negotiate the web site and there are some good bargains to be had.

### CHRISTMAS FUNDRAISING CATALOGUE

We were delighted to receive a cheque in the sum of £66.31 from the Web Ivory Christmas Catalogue company. Thank you to everyone who made purchases from the catalogues.

### BELPER ORGAN CLUB

Our thanks go to the Belper Organ club, who held a fund raising evening in November and raised over £300 for us. BPA Committee member Leigh Drake attended the evening event and was presented with a cheque.

**If you belong to a social group why not hold a fund raising event in aid of the British Porphyria Association. We will be able to help you by providing flyers, sponsor forms etc. Call our help line for assistance on 01474 369231.**



British Porphyria Association Registered Charity No.1089609

## MEMBERSHIP / DONATION FORM & STANDING ORDER

By making a donation to the British Porphyria Association you will know that you are making a vital contribution our work. Simply making a small donation will help us raise awareness, expand our help line or support our research.

### DO YOU PAY UK TAX?

If you do, you can add 28% to the value of your gift to the British Porphyria Association at no extra cost to yourself. Simply sign and date the Gift Aid declaration and for every £1 you give we can ask the Inland revenue to give us an extra 28p.

TITLE: \_\_\_\_\_ NAME: \_\_\_\_\_

ADDRESS: \_\_\_\_\_

POSTCODE: \_\_\_\_\_

EMAIL: \_\_\_\_\_

TELEPHONE: \_\_\_\_\_

TYPE OF PORPHYRIA: \_\_\_\_\_

DATE: \_\_\_\_\_

- I would like to pay my annual membership fee of £10
- I would like to make a donation of:
  - £10  £20  £30  £40  £50  other £ \_\_\_\_\_
- I would like to pay by Standing Order (please fill in the form opposite)
- I enclose a cheque made payable to the 'British Porphyria Association' for £ \_\_\_\_\_

**Please send this form to:** The Treasurers, British Porphyria Association, 11 Blakehill Terrace, Undercliffe, Bradford, West Yorks, BD2 3JS.

A monthly standing order or any donation you can give will make a difference.

BANK/BUILDING SOCIETY NAME: \_\_\_\_\_

BRANCH ADDRESS: \_\_\_\_\_

POSTCODE: \_\_\_\_\_

Please pay the British Porphyria Association the sum of £ \_\_\_\_\_ each month/quarter/year (delete as appropriate) from my account until further notice.

ACCOUNT NAME(S): \_\_\_\_\_

SORT CODE: \_\_\_\_\_ ACCOUNT NO: \_\_\_\_\_

STARTING ON\* (DATE): \_\_\_\_\_

\*This date must be more than one month after today 's date

SIGNED: \_\_\_\_\_ TODAYS DATE: \_\_\_\_\_

This cancels all existing Standing Orders to the British Porphyria Association (please tick)  yes  no  not applicable

### GIFT AID DECLARATION

I am a UK Tax payer and would like the British Porphyria Association (Registered Charity No.1089609) to treat all donations I have made since 6th April 2000, and any future donations, as Gift Aid donations until I notify you otherwise. (we can reclaim the tax on your donations at no cost to yourself)

DATE: \_\_\_\_\_ SIGNATURE: \_\_\_\_\_