

# Phase III Clinical Trails in JNCL

## Treatment Outcomes & What Matters Most to Families

### A UK Parents Perspective by Ellen Bletsoe

#### Wellbeing

In this presentation I will look at which aspects of Juvenile Batten Disease have been the most difficult & why, then I shall suggest which treatment outcomes would be the most meaningful to families. This is my own opinion based on both personal experience and experience gained through my role as trustee of the BDFA. I think it is important to say that each families experience is unique and although there are common threads, the way the disease presents does vary quite considerably from case to case. What I have done is to try to find areas of common ground. Naturally the best treatment of all would be one that cures Batten Disease, but I shall be looking at what treatment effects would be the most helpful in the absence of a total cure.

In Juvenile Batten Disease children are born apparently completely healthy and develop normally for the first few years of life. Generally families have been able to spend enough years with a completely healthy child so that when the symptoms first appear they are a total shock.

#### Sight Loss

#### Wellbeing

The first disease symptom is usually sight loss. This is the stage at which your child no longer has perfect health and so it is a difficult time for families. The child usually adapts well to this change and with the right care & assistance can maintain a good quality of life despite the difficulties associated with blindness. Most of our UK families are misdiagnosed as having a macular dystrophy at this point. Blindness is a big challenge but in isolation it does not present the most significant problem for children with Batten Disease.

Mood & Behavioral changes may at first be misinterpreted as the child struggling to come to terms with the sight loss. Later it becomes obvious that this is a separate problem. Panic, distress, depression & hallucinations are all common. These problems can be alleviated through careful management and it is really crucial that youngsters with Batten Disease have an emotionally secure and stable environment to help them cope. I have two examples that demonstrate how traumatic these changes can be:

1. A 17year old boy with JNCL who refused to leave his bedroom for 3 days as he was absolutely convinced that there was a killer monster in the kitchen of his family home. He also refused to let any family members go near the kitchen.

#### Mood & Behavioural Sight Loss Changes

#### Wellbeing

Mood & Behavioural  
Sight Loss Changes  
**Wellbeing** Seizure  
Control

2. A 21 year old young man with JNCL whose family had sent him to hospital as they could no longer cope. The nurses were also unable to care for him. He had stopped eating and was in soiled clothing when Sarah Kenrick visited him. Only her highly experience care was able to reassure him and coach him out of his highly distressed state. She found out during her visit he had been convinced that he had died and gone to hell.

These problems can be extremely upsetting and it is quite common for young people with Batten Disease to be excluded from school settings and even from family homes as a result of behavior problems. The issue of control is a useful key in managing these difficulties. This disease is about loss of skills and thereby loss of control. If we do all we can to work against the disease by allowing the young person to make his/her own decisions and have as much control over their own circumstances as possible this will result in less frustration and fewer problems. Mood & behavioral changes can be a very traumatic but with informed and appropriate care these changes can be better managed.

Mood & Behavioural  
Sight Loss Changes  
**Wellbeing** Seizure  
Control  
Loss of Mobility

The type, severity and frequency of seizures does vary quite considerably from case to case. It is very distressing to witness your child having a seizure, but the young person generally has no memory of it. Seizures do affect the young persons quality of life in other ways though:

1. Sleep disturbance is common and can impact quite significantly on family life.
2. Seizures cause "downtime" which is disruptive to daily routines as the youngster will needs to sleep and can remain drowsy for sometime following the seizure.
3. Families live in the fear that the seizures may result in permanent damage to the brain or leave the young person in a comma.
4. Many anti-epilepsy drugs have side effects and these can cause problems including impaired brain function. Seizures cause distress to the carer and downtime to daily routines but are not hugely distressing to the young person and can mostly be quite well controlled by drugs.

Mood & Behavioural  
Sight Loss Changes  
**Wellbeing** Seizure  
Control  
Cognitive Changes Loss of Mobility

Loss of mobility is quite wide ranging and in my opinion covers all of the following: fine motor skills, muscle control, ability to walk & swallow, movement, constipation, continence and heart beat. Loss of mobility declines gradually over many years. The first thing I noticed with Laura was that she had lost the firmness of her grip when holding my hand. Later her ability as a blind dressage rider began to decline so that she no longer had such firm control of her pony. Then she could no longer run the longer distances. Then walking longer distances becomes a problem. Next I noticed some curvature of the ankles and a change in her posture and Laura began to complain of pain in her legs. As this loss progresses it becomes increasingly difficult to keep the body exercised and this also causes problems. Later on families have to deal with total immobility & if the child is heavy to lift this can become quite a burden. When the ability to swallow is lost feeding must be done through a tube and this certainly effects quality of life.



Despite all of these changes the consensus of opinion is that the young person seems to handle this loss of mobility surprisingly well and adjusts to each change of their circumstances without a great deal of distress so although loss of mobility is increasingly restrictive with the right equipment and care each stage can be managed.

The decline in awareness, judgement & perception is again gradual. Memory function decline can be frustrating as it causes learning and communication difficulties. Later on it is very hard for the family when the young person loses interest in world around them and no longer wants to engage in every day life. Another problem in the later stages is body dismorphia - i.e. the young person is no longer able to sense their limbs. This is distressing & confusing. They know that they should have legs but have no sense of where those legs are. A curiosity of the cognitive decline is that Batten youngsters always retain their personalities and a sense of who they are. But overall cognitive decline is thought to be a kindness as it seems to allow the young person to accept many of the other symptoms of the disease.



It is clear that loss of speech causes a great deal of frustration for young people with JNCL. Once again the decline is very gradual and difficulties present quite early on. It is common for the young people to struggle with immaturity of speech, difficulties in word retrieval, and repetitive word patterns a long time before the ability to speak is lost entirely.

**Which treatment outcomes would be the most meaningful?**

Having looked at each area of loss of ability in isolation, now we will consider the effect of restoring one ability in isolation and therefore try to think about which treatment outcomes would be the most meaningful.



**Sight restored in isolation**

Quality of life would definitely be improved if some sight could be retained or restored. I've often heard it said that we take in about 80% of all of our information visually though I have not been able to find the study which proves this. It is certainly true that sight has a massive effect on our ability to engage in the world around us. Having the benefit of some sight would make many everyday things such as country walks, sitting in the garden, watching films and other performances far more enjoyable for young people with Batten Disease. One thing my daughter would love to be able to do is to see her brothers face again. The parents I spoke to felt that saving or restoring sight would offer the greatest improvement in quality of life for young people with Batten Disease.



**Mood & behaviour restored in isolation**

Improving mood & behavior would certainly make the situation less stressful for families and this would improve overall wellbeing, but it is important that any attempt to improve mood & behavior doesn't mask the true personality of the youngster - i.e. parents would not want a treatment that might improve the quality of life for the carer but be detrimental to the youngsters spirit, character and strength. Families would prefer to receive support to understand & manage the disease rather than risk subduing their child. So although overall wellbeing would improve there is concern about the knock on effects.

**Better seizure control**

Reducing seizure activity would certainly ease distress to the carer and be less disruptive to daily routines and so again would be desirable but does not have the potential to add as much value as restoring sight.

**Mobility restored in isolation.**

The opinion here is that it could actually be unhelpful to maintain mobility if all other areas of decline still happen as it might be difficult to keep the young person safe if they are strong and mobile but without the cognitive ability and sight to recognize danger.

**Cognitive ability restored in isolation**

Parents fear that if cognitive ability is maintained while everything else diminishes it might be like having 'locked in' syndrome. This could be very frustrating and distressing for the young person. Parents feel that it is kinder for the cognitive ability to diminish at the same time as the other abilities.

**Loss of Speech**

If the mechanism to speak was restored but the cognitive ability to form the words was lost the young person would still not be able to communicate. It would certainly be highly desirable to maintain communication but this might require more than one ability to be saved or restored.



Mood & Behavioural  
Sight Loss Changes  
**Wellbeing** Seizure  
Cognitive Loss of Mobility  
Changes Control

### Conclusion

What families want most is a total cure. In the absence of a cure parents would want to focus on improving the quality of life for their children. All parents agreed that they would not wish to prolong life at any cost and they are comforted by the thought that as a parent they will be around to ensure that the child is loved and gets the best care possible right up to the end. So trying to stop just one symptom of this disease in it's tracks would only be beneficial up to a point for some of the abilities, whereas any retained sight would always be of use. So if we are to target only one treatment outcome the first choice should be to retain or restore some sight. The second most meaningful treatment outcome would be to retain or restore the ability to communicate. As there are many ways to communicate this would not necessarily involve speech. I have a friend with locked-in syndrome who communicates by blinking her eyes so again this problem could be partially solved with sight.

# To Conclude:

- What families want most is a total cure
- Parents do not wish to prolong life at any cost
- The most meaningful single treatment outcome would be to retain or restore some sight
- The second most meaningful treatment outcome would be to retain or restore the ability to communicate
- Improving mood & behaviour is desirable but not at the expense of the young persons character.
- Reduced seizure activity would help
- Maintaining mobility while all other abilities decline could be unhelpful
- Overall the cognitive decline is considered to be a kindness as it eases the problems caused by other losses of ability.
- Retaining or restoring the mechanism of speech would only be useful as long as the young person has sufficient brain function to form words



































Thank you