Fatigue in hemodialysis patients : state of the scientific data

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Context :

Fatigue is the most common complaint of hemodialysis-impaired kidney patients, severely affecting their quality of life.

Its prevalence varies from 60 to 97% depending on the studies. It is predictive of cardiac events and is associated with lower survival rates.

Fatigue management is essential for the management of hemodialysis patients. Tiredness is often underestimated because of its invisible, insidious and subjective nature. Its causes remain uncertain and due to a combination of several factors.

The purpose of this review of the literature is to understand how fatigue is expressed in hemodialysis patients, how it is felt, by a state of the scientific data, to intervene appropriately.

Method :

Research has been conducted in Pubmeb, Science Direct and Scholar for resources published in the last ten years in English and French.

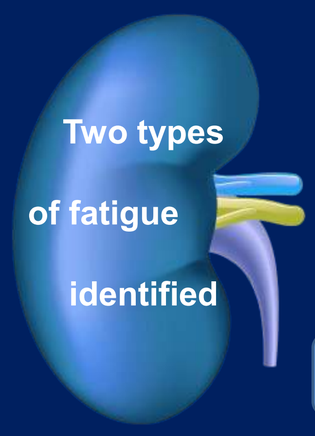
The keywords : hemodialysis – dialysis – fatigue were used with all relevant combinations.

The inclusion criteria are : patient reported results, recovery time after dialysis, adults and fatigue after dialysis. Articles concerning children, peritoneal dialysis, kidney transplantation and those involving pain, cancer, co-morbidities are excluded.

Among the 162 references found, articles from **medical publications and nursing sciences** were selected.

This subject has been little discussed in the literature, the bibliographic references retained and similar articles proposed by the databases have been analyzed. The international cohort on DOPPS hemodialysis practices was the subject of research.

Results :



Continuous fatigue

- Peak of fatigue after dialysis
- Maintain a moderate level of fatigue
- Persistence until the next dialysis
- Relationship with depressive symptoms

Post-dialysis fatigue

- Peak of severe fatigue just after dialysis
- Need to sleep
- Average recovery time estimated at 4 hours
- Total recovery then

Two groups of fatigue qualities are :

-**Mental** including emotional and cognitive qualities: difficulties of concentration and memory, vulnerability to misunderstandings, decreased alertness.

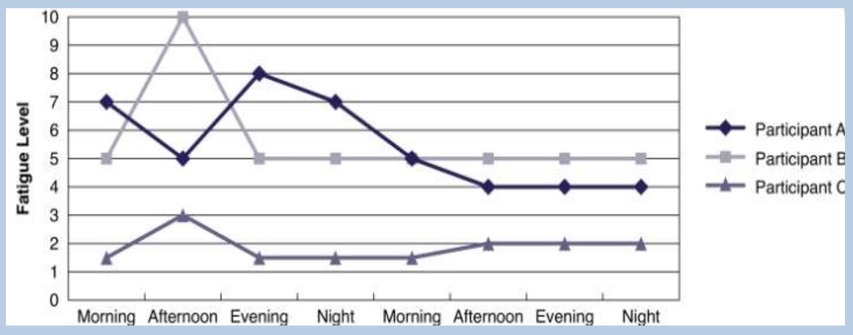
- **Physics** including post-dialysis fatigue, drowsiness, lack of energy and muscle weakness.

Fatigue is a phenomenon determined by physical, psychological and emotional components.

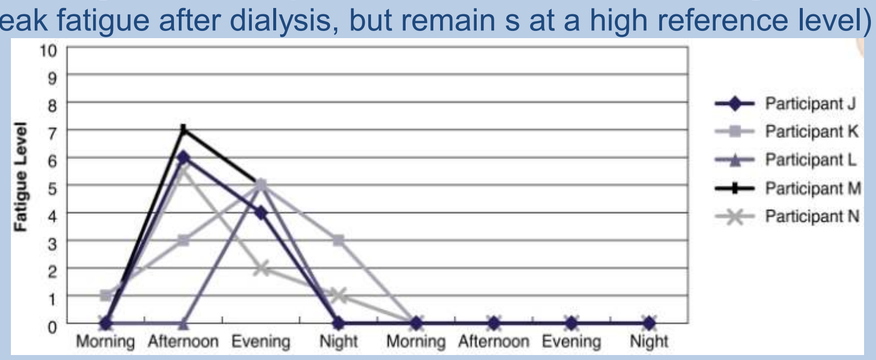
It causes a decrease in the ability to fill roles in the relationship :

- Deprivation of time (time spent in dialysis, time spent sleeping)
- Loss of the ability to work
- Social and family isolation
- Lack of sexual stamina

Terms used to express fatigue	
By the patients	**By health professionals**
Tired, weak, exhausted, heavy, empty, Lifeless or slow	Boredom, intolerance to effort, lack of emergy and weakness

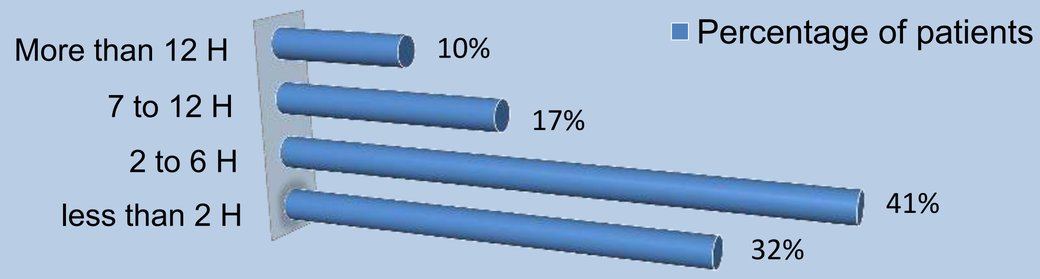


Fatigue level of patients with continuous fatigue
(Peak fatigue after dialysis, but remain s at a high reference level)

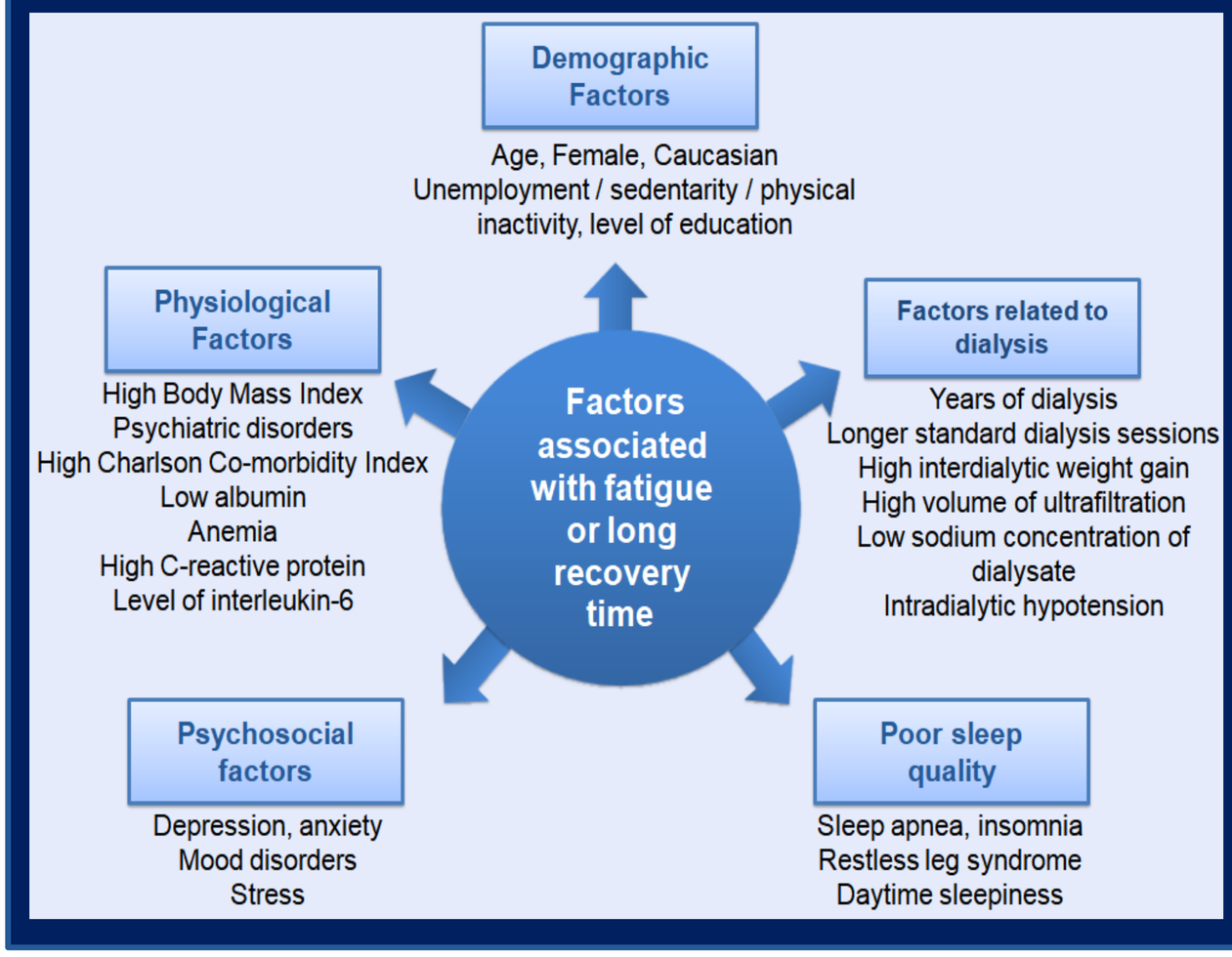


Level of fatigue of patients with post-dialysis fatigue
(Acute increase in fatigue after dialysis and stops at night)

A Comparison of Temporal Patterns of Fatigue in Patients on Hemodialysis. Horigan Ann E- Nephrology Nursing Journal 2016 Mar-Apr



Recovery time after hemodialysis in hours.
Dialysis Outcomes and Practice Patterns Study (DOPPS) 2014 - Prospective cohort study on hemodialysis practices in 20 countries.



No reliable fatigue scale is specifically developed for the end-stage renal failure population due to a lack of consensus linked to the multiplicity of factors associated with co-morbidities.

Some associated factors are modifiable, but this lack of scale does not allow to test if the correction of one or more of them would improve the fatigue.

Formative research is now being conducted to define, individualize and validate a measure of fatigue in hemodialysis patients, while capturing the habits of each.

Conclusion :

The description of fatigue makes it possible to identify associated factors that are potential avenues for intervention by health professionals.

Some factors associated with fatigue are not modifiable, a personalized educational program is currently being developed, aimed at teaching patients to use energy management to manage fatigue.

Advanced practice nurses are strategically positioned to assess dialysis fatigue and its impact on daily living, to help patients use their support systems and to develop educational strategies to manage their effects.

References :

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WHEN SHOULD START THE DIALYSIS OF A CKD PATIENT?

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Introduction

In 2015, more than 353 million people or **5% of the world's population**, suffer from chronic kidney disease (CKD). The World Health Organization (WHO) predicts an increase in the prevalence of CKD by 17% in the next 10 years, making it a **global public health problem**. This **prevalence varies** from country to another and access to treatment depends on the **socio-economic level** of the country concerned.
For a better acceptance and observance of the treatment, the choice of substitution must be a collegial discussion between the patient and the medical team.
Conservative treatment and **renal transplantation** are alternative means such as continuous extrarenal treatment.
Starting Dialysis is a decisive step prepared upstream since the announcement of the diagnosis of chronic pathology. It includes the preparation of access to dialysis. It integrates the medical and paramedical team and the patient according to these information needs.

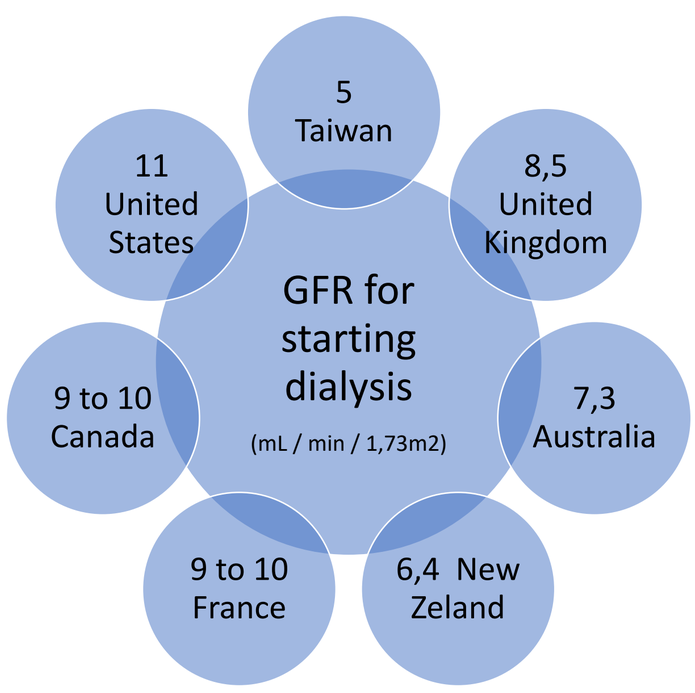
The goal of my research is to determine when to decide the start of dialysis for patients with CKD.

Methods

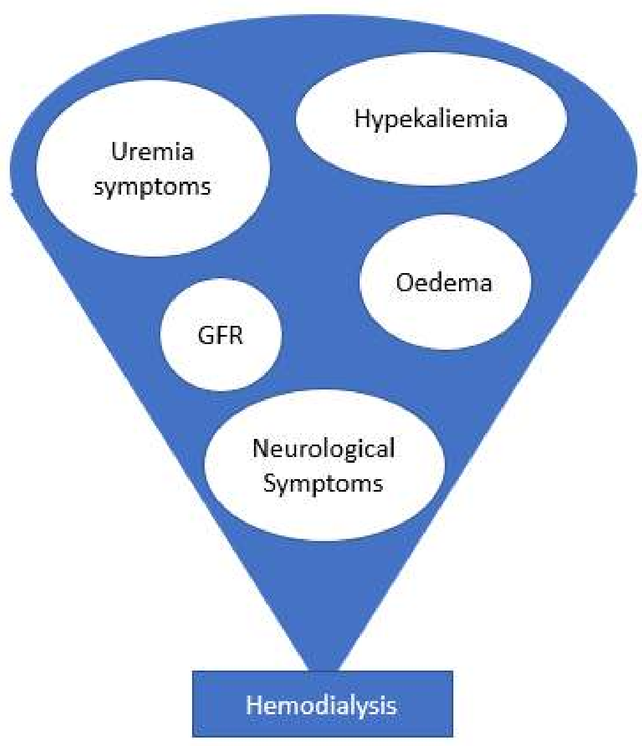
A search was conducted in PUBMED and Google Schoolar database for resources published between 2014 and 2019 in English and in French. The keywords **"decision, dialysis, start-optimal timing**" were used in all relevant combinations, and inclusion criteria were patient with end stage renal disease at least. This yielded a total of 6 records. A critical reading was done using Critical Appraisal Skills Program (CASP) tool available online. Four publications have been selected, appropriately framing my research question. We would focus the work on the kidney disease: improving global outcomes (KDIGO) which is the gold standard**.**

Results

The modality of initiating dialysis is ideally chosen through **shared decision-making** between the health care team, the patient and their caregivers. This decision considers the care path, local resources, patient money issue, the capacities of regional health facilities and medical protocols.
The main element in favor of starting dialysis are the **clinical symptomatology** and its impact on **quality of life of the patient**. Signs of uremia and / or water-related overload, electrolyte and / or neurological disorders are indicative of worsening renal failure and imply the need to begin the discussion of initiating the continuous extrarenal treatment.
According to the publications studied, the estimated glomerular filtration rate (eGFR) specific for the initiation of dialysis in the absence of symptomatic renal insufficiency has not been established.



GFR for starting dialysis, according to KDIGO (Chan et al., 2019)



Criteria of starting hemodialysis according to KDIGO (Chan et al., 2019)

Conclusion

According to the reading of this study results, it seems that decision to start dialysis is above all a question of **tolerance of the patient**. The of the disease is considered during this discussion. The acceptance of the treatment mode and its understanding are crucial for success and future compliance. The role of the medical and paramedical team is paramount in this process. In addition, the patient must be undertaken on a waiting list of live donor transplant or deceased.
The treatment mode is not irreversible. It is adaptable aggravation of health and the speed of evolution to different moments of the patient's life and evolutive. Dialysis techniques improve and patients benefit from the choice of alternate treatment.

The object of a future study could be to know if the current standards of substitution will be again in a context of increase of the prevalence of the CKD and the introduction of Advanced Practical Nurse (IPA) in the course of care of the patient.

References

Shock treatment to improve the quality of life of depressed elderly people in association or not with medication

Nathalie PRATZ, advanced practice nursing student, second year of master. University of Lorraine, Nancy

Context

Electroconvulsive therapy (or ECT or still called sismotherapy) is historically inspired by electroshocks of the 1930s, with a negative picture then criticized by the movie and the media, considered as a barbaric treatment, and made in unethical conditions.
At the same time, since 1960s, the arrival of antidepressant drugs contributed to the gradual decline of ECT.
But with the emergence of drug resistance and some side effects mainly observed in the elderly, a renewed interest in ECT was justified.
These various therapies (one drug and the other nondrug) are both indicated for patients with severe treatment-resistant depression, especially in the elderly.

Does ECT, compared to drug treatment alone, improve the quality of life of these people ?

Method

This search was conducted in Pubmed, Google Scholar and EM Premium for ressources written in English and French and published between 2003 and 2017.
The keywords [elderly], [electroconvulsive therapy], [depressive disorder], [quality of life] and [comparison] were used.
A filter of age +65 years old was added too.
[bipolar disorders and schizophrenic disorders] were excluded.
As result, 4 studies from Switzerland, Canada, England and United States were analysed.

Results

Table 1 Evidence based medecine

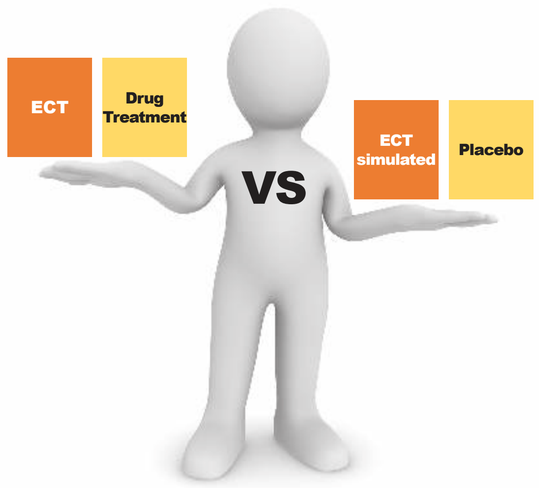


Table 2 Efficacy rate between ECT and Drug treatment

70 - 90% ECT	60 - 80% Drug Treatment

Table 3 Comparative table between only pharm, effects after 24 weeks on the criters physical and mental of score SF-36

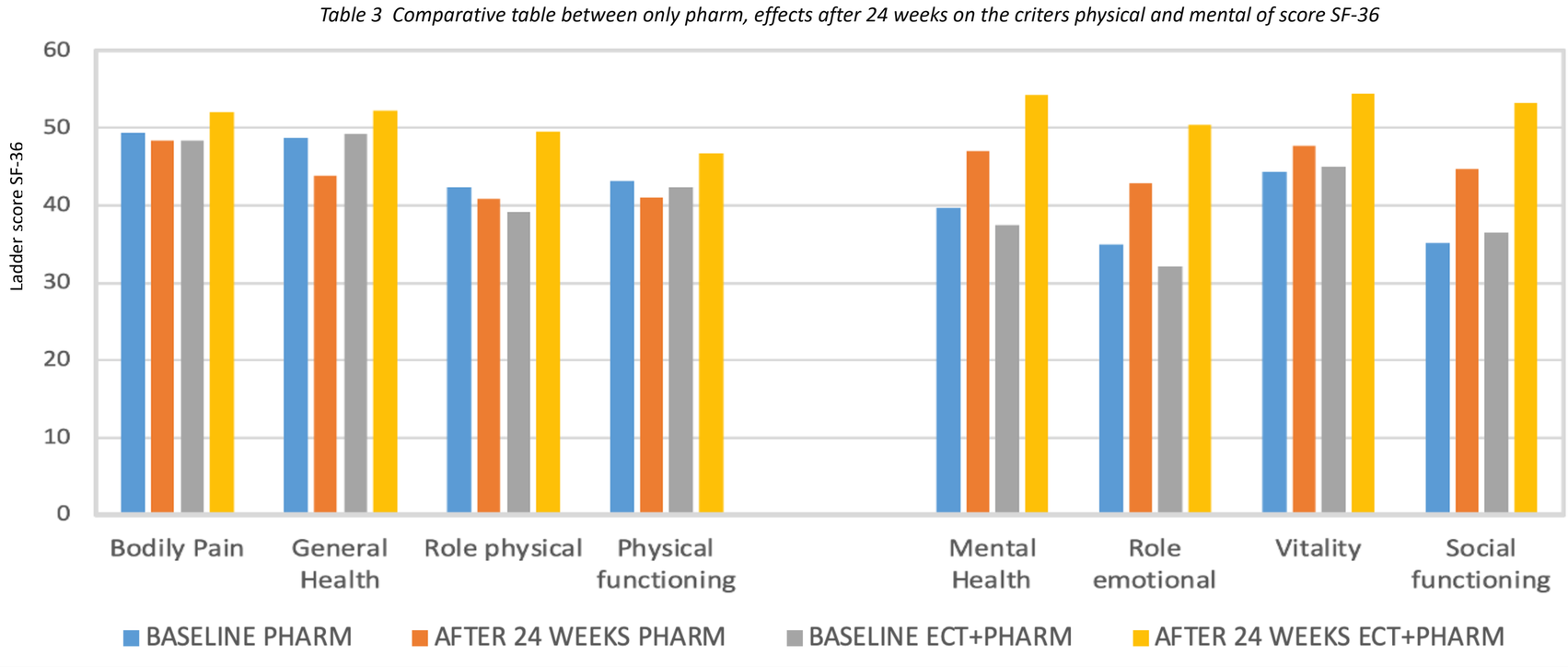


Table 4 conditions to prevent depressive relapse

Conclusion

The studies show the efficacity of ECT compared drug treatment; they confirm the vital role of ECT in the treatment of the most seriously affected persons and they show a significant improvment in the quality of life of patients in the short term.
Continuation of treatment is justified in order to avoid relapses, in combination with antidepressants.
However, other studies are still to be carried out on the duration of study sessions, no consensus has been reached and longer term effects on the quality of life of depressed elderly.

References

THERAPY AND PHELAN-MCDERMID SYNDROME

AUTHOR : Régis AMANN Advanced practise nursing student

INTRODUCTION

A rare disease is a condition affecting a small number of people (lowprevalence), i.e. less than one in 2000 according to the threshold in Europe. In France, it is said that a disease is rare if it affects fewer than 30,000 people. Phelan-McDermid syndrome, also known as 22q13 Deletion syndrome, is a rare genetic syndrome caused by the absence of the SHANK3 gene on the terminal end of chromosome 22, a SHANK3 gene mutation or a ring chromosome 22. This anomaly often results from a mutation (spontaneous) ; a parent can also be a carrier.

The diagnosis is obtained by further DNA testing to detect deletions of very small sizes. The most common features of the syndrome are :

- Intellectual disability of varying importance
- Delay or lack of language
- Motor development disorder
- Autistic symptoms

These clinical symptoms are liable to change from person to person. About 75 % of people with the syndrome have been diagnosed with Autism Spectrum Disorder. Therefore, my research is based on possible therapeutic approaches that may affect these disorders.

METHOD

Significant research has been shown to improve cognitive function, behavior, and other autistic characteristic disorders.

The articles chosen for my research date from 2008 and 2009 on international studies.

Keywords for my research are as follow : autism / Phelan-McDermid syndrome / treatments.

RESULTS

An initial German research, published in 2008, was conducted on Alzheimer patients as well as patients with neurological deficits associated with 22q13 syndrome utilizing nasal insulin. This study was conducted on six children for the duration of one year and resulted in marked improvements short term (first six weeks) for five of the six children's fine and gross motor skills as well as their cognitive function. The long-term effects of this treatment on the health of these children remain unknown. They were of different age groupes and cognitive impairment. This study would require large sampling.

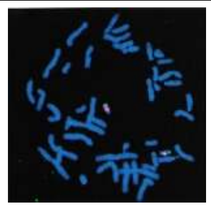
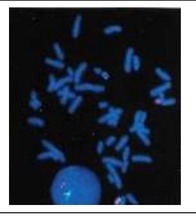
An Italian study, published in April 2009, with the use Risperidone was performed on an 18-year-old girl with this 22q13 deletion presenting with severe intellectual disability, intense agitation and aggressive behavior. This study clearly show low dosage of this drug demonstrated an improvement in behavior and mood. Although, there seems to be a lack of concrete information pertaining to the duration of treatment.

Another US study, completed in 2009, featured genetic diseases such as Rett's syndrome and fragile X with use of targeted therapy (IGF-1)contemplating the growth factor in mutant mice. This demonstrated significant improvements in their behavior and survival. Further studies will be required to understand the exact mechanism of action pertaining to IGF-1. Beneficial effects on other diseases with autistic disorders may arise from such studies.

CONCLUSION

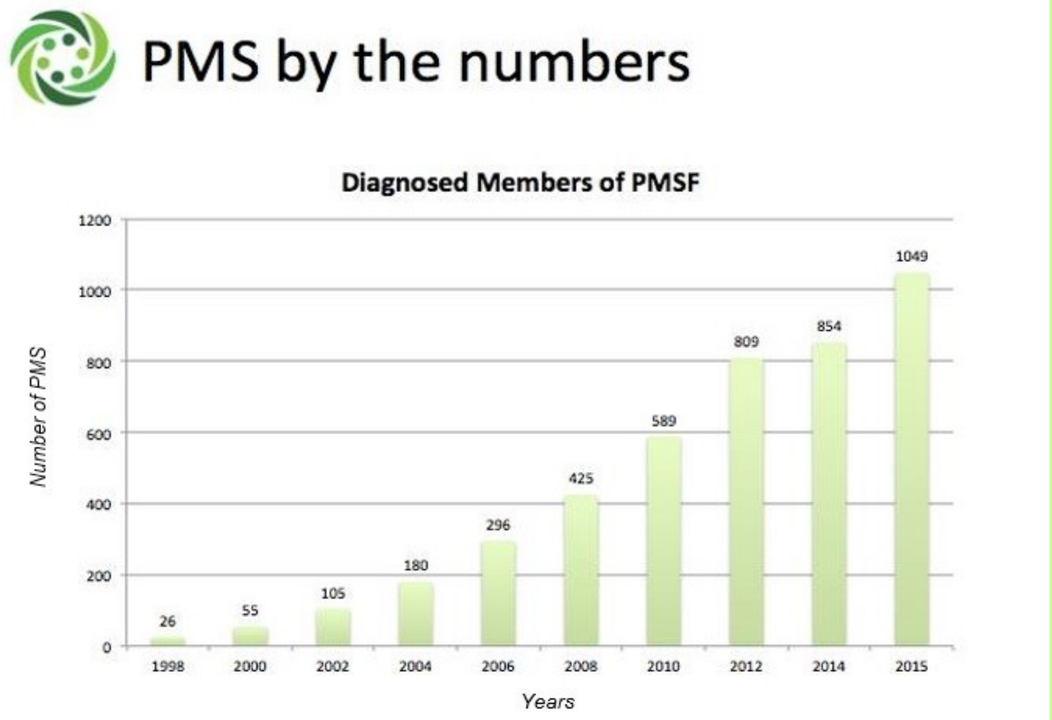
There is currently no cure or treatment specific to Phelan-McDermid, although many existing "therapies/care" are utilized to help people living with this syndrome thus helping them progress in their development and better participate in their daily activities. Presently, approximately 1400 cases have been diagnosed worldwide (January 2017), nearly 200 currently residing in France. These numbers simply pertain to people who have been diagnosed ; it should be noted the percentage of carriers of this gene is much higher. Most of the identified cases are young children, due to the fact that reliable tests date no earlier than 1998. Therefore, most information about Phelan-McDermid syndrome concern children.

ICONOGRAPHY of chromosome examinations performed at Maxime and his parents

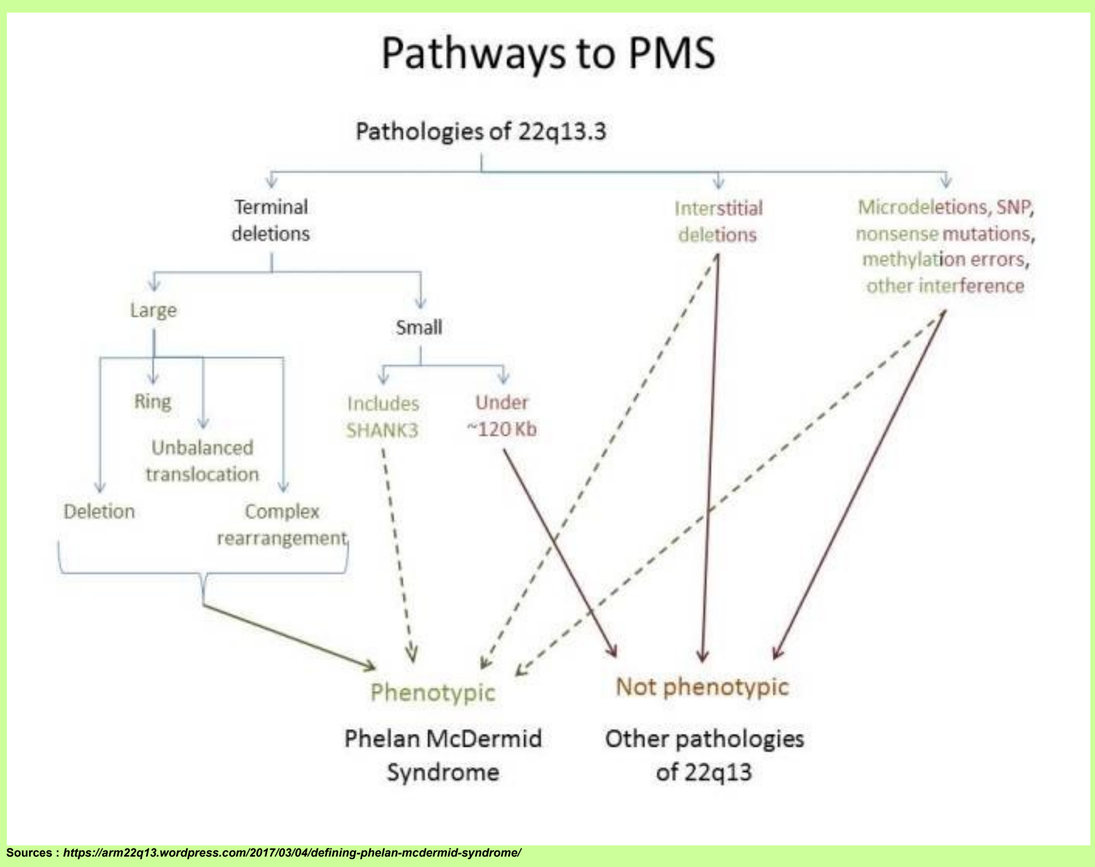
Maxime's mother	Maxime's father	Maxime
		

The fluorescence in situ hybridization study, using a probe specific for the 22q13 region (in green in the photo), made it possible to demonstrate that this chromosomal region was lost in Maxime.

Sources : Pr Jonveaux 2003 - CHU Nancy



Sources : PMS Foundation



Sources : *https://arm22q13.wordpress.com/2017/03/04/defining-phelan-mcdermid-syndrome/*

REFERENCES