SPECIAL TRACES IN THE PERSONALITY OF PARKINSON PATIENTS

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Vienna, Austria

Movement disturbances are the primary complaints in Parkinson 's syndrome and are most troubling every patient in his progressive untreatable illness, diminishing the quality of life for him and for his surrounding. Therapeutic methods were beginning with the Bulgaric cure nearly 100 years ago until continued with the Dopa ara today which is now in an end phase. Melanocyte Inhibiting Factor (MIF) could be an incoming successful treatment, interfering in the metabolism of the Nigra cells.

The Parkinson dementia in its various forms, from the Lewi Body disease to the vascular dementia, is used as an additional therapeutic programme. But the therapeutic effect for dementia using all the different drugs shows not very impressing results, the treatment of the vascular disturbances is not enough focused till now.

In the literature only a few descriptions of special traces in the personality of Parkinson Patients can be found. As main signs are listed mental rigidity, inflexibility, pedantry, trend to overcontrol, social impotency and anancasm. Parkinson patients are described as introverted, undecided, hesitant and sceptical. Some of the patients are classified as workaholic and ahedonic.

This special characteristics can be observed many years before the beginning of the disease. Parkinson patients show special graphomotoric disturbances and have an unchangeable style if they are painting. With the knowledge of the specific personality the additional psychological treatment can be influenced in a positive way. The special behavioural disturbances have to be discussed with the relatives and the professional surrounding.

Special traces in personality of Parkinson patients was from great influence to the history of the last century, because some political leaders were suffering from Parkinson's disease. Mao Tse Tung showed in his historical decision to incorporate the marxistic ideology typical signs of a Parkinson personality, Adolf Hitler was not able to leave the clear recognizable way coming to a catastrophic end. Interesting Parkinson features has to be mentioned in the personality of pope John Paul II.

SUNDAY 28 JANUARY 2007

10:00-12:00 **Epilepsy - Quality of Life -Neurodegeneration**
Chairpersons: ***K. Iqbal -I. Iqbal - N. Tataru***

Monotherapy versus Polytherapy of Anti-epileptic Drugs: Why and When
H. Hosny

Quality of life in people with epilepsy in Russia
A. Guekht

Quality of life in the elderly mentally ill and the right to dye with dignity
N. Tataru

The relationship between novel antipsychotic treatment and Quality of Life (QOL) for patients with neurodegenerative Disorders
J. Leszek

Prion protein co-localizes with nicotinic acetyl choline receptor β4 subunit in central nervous system and gastrointestinal tract.
T. Sklaviadis

Neuropsychology - Haemodynamics
Chairpersons: ***A. Kertesz - O. Tanridag - H. Hosny***

Special Trace in Parkinson Personality
F. Gerstenbrand

Haemodynamics of the aging cerebral blood supply
P. Kalvach

13:00-14:00 **Break**

HELLENIC SOCIETY FOR AMELIORATION
OF THE QUALITY OF LIFE
FOR CHRONIC NEUROLOGIC PATIENTS

5th International Congress on the Improvement of the Quality of life on Dementia, Parkinson's disease, Epilepsy, MS and Muscular disorders

FINAL PROGRAM & ABSTRACT BOOK

25 - 30 January 2007, Catania - Italy
Grand Hotel Excelsior
Grecia Magna

Special Trace in Parkinson Personality

Premorbid and morbid personality

F. Gerstenbrand, E. Karamat, W. Struhal,

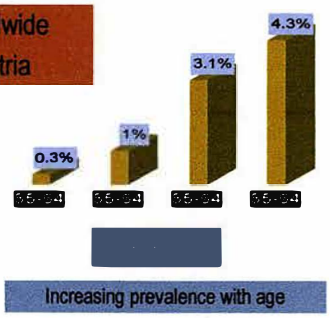
Vienna, Austria

5th International Congress
On the Improvement of the Quality of Life
On Dementia, Parkinson's Disease, Epilepsy,
MS and Muscular disorders
25-30 January, 2007 Catania – Italy

Epidemiology of Parkinson's disease

4 million patients worldwide
20.000 - 30.000 in Austria

Age of 62 – 65y
< 40y: 5 - 10 %



Increasing prevalence with age

Different clinical forms of PD

(Barbeau, 1982, Gerstenbrand, 1983)

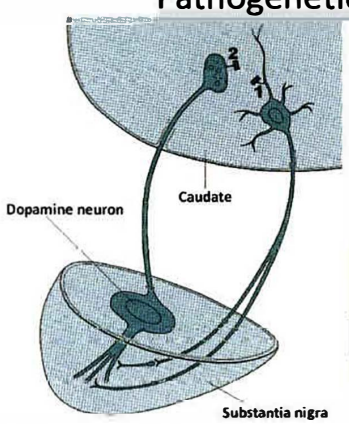
- Acinetic-rigid type
- Equivalent type
- Tremor-dominant type

- Old-age type (Alters-Parkinson)

Causes and Risk Factors of Idiopathic Parkinson Syndrome (IPS)

- Age
- Gene analysis
  - α - Synuclein, Parkin
- Neurotoxins
  - environment
  - Methyl - Phenyl - Tetrahydro - Pyridine (MPTP)
  - Carbonmonoxid, Mangan, Cyanid

Pathogenetic basis

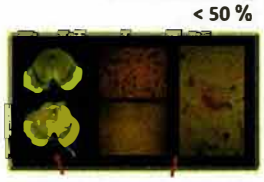


Loss of Dopamine

Post mortem:
> 90 %

Main symptoms:
70 - 80 %

" asymptomatic " :
< 50 %



Basal ganglia and lewy bodies

Pathogenesis of Parkinson's disease

- Loss of dopamine in striatum
  - Asymptomatic (mot.): < 50 %
  - Cardinal symptoms: 70 - 80 %
  - Post mortem: > 90 %

Pathogenesis of Parkinson - Syndrome

Death of neuronal cells in Substantia nigra leads to loss of dopaminergic afferences in Corpus striatum

⇩ ⇩

Disinhibition of striatal cholinergic neurones

Disinhibition of striatal GABA minergic projections

⇩ ⇩

Dysfunction in pallido - thalamo - cortical networks

⇩ ⇩ ⇩

Classification of Parkinson - Syndrome

- Idiopathic PS (80 - 85 %)
- Atypical PS (4 - 5 %)
  - MSA
  - PSP
  - CBGD
- Secondary PS (10 - 15 %)
- Pseudo-PS

Clinical Aspects of IPS

Preliminary symptoms
Emotional lability
Memory dysfunction
Mood disorder
Performance brake
Sense of smell dysfunction
Anancastic personality

Early symptoms
Depression, fear
Vegetative disorder
Vigilance disturbance
Posture abnormality
Hypokinesia
Pain in vertebral spine, headaches

Full stage
Akinesia
Rigidity
Tremor
Bradyphrenia
Disturbance in postural reflexes
Disturbance of cognitive performance
Disturbance of autonomic NS

Principles of Therapy - Objectives

- Prevention
- Restauration of premorbid neuronal integrity and function
- Prevention of neuron decline (neuroprotection)
- Compensation of symptoms
- Amelioration of Quality of Life

Individual treatment program in Parkinson Disease

- Age
- Profession, hobby, partner
- Characteristic of symptoms / Disability
- Dominant symptom(s)
- Costs (?)

Summary in treatment of PD

- Pharmacological treatment as the basis
  *) initial phase: Amantadine can be used
  *) basic regime: L-Dopa
  *) later phase combination with agonists, apomorphin-pump system
  *) Beta-blockers in resistant tremor
- Surgical treatment used in later course, especially to decrease side effects.
  *) Deep brain stimulation main method
- Implantation treatment may be successfull, but currently in experimental stage

Non-motoric symptoms of IPS, neuropsychiatric

- Cognitive Dysfunction
  - Visual spatial deficit
  - Memory disturbances
  - Frontal dysfunction
- Dementia
- Depression
- Symptoms of an anancastic personality

"The senses and intellects being uninjured"
Parkinson, 1817, Shaking palsy

Dementia in Parkinson Disease

- Multifactorial pathology
  - Lewy bodies
  - Fibrills
  - Vascular lesions

Clinical types of dementia in PD

- Subcortical type
- Visuo-spatial & executive deficits
- Memory deficits

Factors in development of dementia in PD

- Longlasting course of PD
- UPDRS mot. > 25
- Acinetic-rigide form of PD
- Early autonomic disturbances
- Less dementia in tremor dominating form
- Increased tendency to psychotic reactions

Risk factors for dementia in PD

- Dopaminergic treatment
- Antidepressiva & sedativa
- Co-morbidity (cerebro-vascular)
- Surgical intervention (narcosis)

Non motor symptoms in PD
(H.F. Durwen, 2003)

- Cognitive partial disturbances, neuro-psychological deficits (25%)
- Dementia (between 8% and 80%)
- Depression (30% – 60%)
- Anxiety (40%)
- Psychotic decompensation (in later state)

- Neuro-behavioral deficits
- Obsessive compulsive disorder
- Anancastic symptoms

Obsessive compulsive disorder (OCD)
(ICD 10 [WHO]: F:42.0)

- Fear of dirt or contamination by germs
- Fear of causing harm to another
- Fear of making a mistake
- Fear of being embarrassed or behaving in a socially unacceptable manner
- Fear of thinking evil or sinful thoughts
- Need for order, symmetry or exactness
- Excessive doubt and the need for constant reassurance

Anancastic personality disorder
(ICD 10 [WHO]: F. 60.5)

- Feelings of doubt
- Skepticism and caution
- Perfectionism
- Excessive pedantism
- Checking and preoccupation with details
- Excessive conscientiousness
- Excessive achievement-orientated
- Compulsive control mechanism
- Stubbornness
- Unscrupulousness
- Rigidity

Psychological methods to examinate premorbid signs in PD

- Mini-mental state (MMS)
- Wechsler Adult Intelligence Scale (WAIS)
- Intelligence quotient and VIQ plus the subtests
- Geriatric Depression Scale (GDS)
- Cattell's 16 PF personality inventory (assessment of the actual personality profile)
- Evaluation of semi-standardized interviews

Premorbid personality in PD, results of different tests

PREMORBID PERSONALITY IN PD AND ET

TABLE 1. *Results of WAIS and MMS in controls, patients with essential tremor and Parkinson's disease*

Tests	C (N = 17)	ET (N = 20)	PD (N = 38)
WAIS			
VIQ	103.4 (± 12.3)	107.5 (± 9.7)	103.5 (± 11.7)
Information	98.1 (± 13.5)	106.1 (± 11.0)	98.9 (± 14.5)
Similarities	109.0 (± 13.4)	109.4 (± 11.7)	108.6 (± 10.7)
Picture completion	97.4 (± 14.4)	100.6 (± 12.1)	89.4 (± 16.8)
Block-design	106.6 (± 10.7)	105.5 (± 14.2)	96.4 (± 12.2)
IQ	109.2 (± 13.8)	111.5 (± 11.0)	103.1 (± 14.3)
Mini-mental state	28.8 (± 3.2)	29.2 (± 2.3)	28.0 (± 3.3)

C, controls; ET, essential tremor; PD, Parkinson's disease, VIQ, Verbal Intelligence Quotient; IQ, intelligence quotient.

Personality Profile of Parkinson patients by Cattel's 16 PF

TABLE 1. Personality profile of Parkinsonian patients and controls by Cattell's 16 PF [mean score (±S.D.)]: significant differences between patients and controls (38 Parkinsonian patients, 17 healthy controls) (Poewe *et al.*, 1990)

Factor	Patients	Controls
N*	↑5.4 (±1.9)	3.9 (±1.6)
O*	↑6.5 (±1.6)	4.9 (±2.7)
Q4*	↑5.1 (±2.0)	4.1 (±1.5)
QII*	5.1 (±1.6)	↑6.3 (±2.3)

* $P < 0.05$.
Factor N, shrewd, calculating, socially alert; factor O, apprehensive, self-reproaching, worrying; factor Q4, tense, driven, restless, overwrought; factor QII, low adjustment, sceptical, cautious.

Personality profile of 38 Parkinson patients, Cattell's 16 PF
(Poewe, et al, 1990)

- Factor N: shrewd, calculating, socially alert
- Factor O: apprehensive, self reproaching, worrying
- Factor Q4: tense, driven, restless, overwrought
- Factor QII: low adjustment, sceptical, cautious

Evaluation of semi-standardized interviews, PD and controls

	Introverted/ depressed	Workaholic	Pedantic
Patients ($N = 33$)	49%* (48/50)	71.5% (50/85)	75%* (74/75)
Controls ($N = 17$)	17.5% (11/24)	55.5% (41/70)	29.5% (24/35)

Percentage given as means of 2 ratings with individual rating in brackets; $p < 0.05$	Rigid	Loner	Non-smoker	Teetotaller
	50% 42/58	47.5%* (45/50)	66.5% (61/72)	28% (27/29)
	14.5% (12/17)	17.5% (11/24)	49.5% (41/50)	29.5% (24/35)

Traits of premorbid Parkinson personality, results of semi-standardized biographical interview

(Poewe, et al, 1990)

- introverted
- depressed
- pedantic/compulsive
- mentally rigid
- loner
- workaholic
- teetotaller

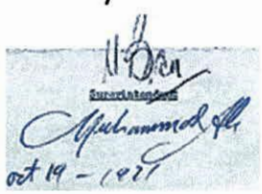
Premorbid features of PD patients evolving patient and family interviews

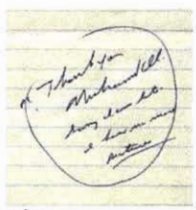
DSM IV Cluster B Personality Disorders
301.7 Antisocial Personality Disorder

There is a pervasive pattern of disregard for, and violation of rights of others occurring since age 15 year , as indicated by three (or more) of the following:

(1) Failure to conform to social norms with respect to lawful behaviour as indicated by repeatedly performing acts that are grounds for arrest;
(2) Deceitfulness, as indicated by repeated lying, use of aliases, or conning others for personal profit or pleasure;
(3) Impulsivity or failure to plan ahead;
(4) Irritability and aggressiveness, as indicated by repeated physical fights or assaults;
(5) Reckless disregard for safety of self or others;
(6) Consistent irresponsibility as indicated by repeated failure to sustain consistent work behaviour or honour financial obligations;
(7) Lack of remorse, as indicated by being indifferent to, or rationalising having hurt, mistreated, or stolen from another.

Graphomotoric analysis Handwriting, years before onset of PD





1986

- Excessive rigidity of stroke
- Restrained ad deteriorated motion
- Lack of flow and rhythm

Graphomotor analysis after Lockowandt

Premorbid and morbid traits in the personality of patients with PD

F. Gerstenbrand, E. Karamat, 1999

Clinical features
- Anancastic
- Pedantic
- Introverted
- Apprehensive
- Irresolute
- Undecided
- Wavering
- Hesitant
- Self-reproaching
- Skeptical
- Inner tension
- Restlessness

Social attitudes
- Ahedonic
- No tendency towards addictiveness
- Difficult relationship with women
- Loner
- Non-smoker
- Teetotaller
- Workaholic

Historic persons with the diagnosis Parkinson Disease

- Adolf Hitler
- Mao Tse Tung
- Leonid Breschnew
- Francisco Franco
- Pope Johannes Paul II.
- Muhammad Ali (Cassius Clay)

Mao Tse Tung

- Amimia
- Rigid position
- Tendency to body bend position
- Akinesia

Leonid Breschnew

- Amimia
- Rigid position
- Bend posture
- Akinesia

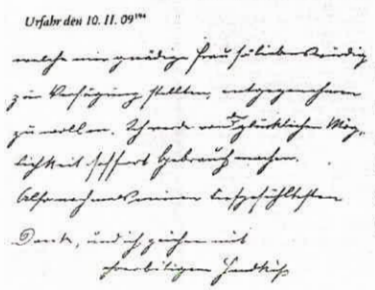
Pope Johannes Paul II

- Amimia
- Akinesia
- Bend posture
- Rigid position

Parkinson patient Adolf Hitler, February 1945, 56[a]

- Amimia, typical Parkinson posture
- Gait with small steps
- Fixing his trembling left arm with right hand.

Typical handwriting of A. Hitler, 30 years before onset



Excessive rigidity, restrained motions, no garland, ruptured stroke, lack of flow and rhythm, no dynamic

Typical painting of A. Hitler, 30 years before onset

Copy of a painting 18th century, Michaelerplatz, Vienna

photo-like, without feeling of motion, no dynamic, no curves

Draft of a stage design for „Lohengrin" by A. Hitler

Restrained motion, no curves, dark impression, stereotyped pattern, pauperisation of content and expression

Premorbid Parkinson's personality traits of A. Hitler I

- Pedantic
- Obsessive/compulsive (anancastic)
- Introverted
- Apprehensive
- Irresolute, undecided, wavering, hesitant
- Self-reproaching
- Sceptical
- Tension, restlessness

Premorbid Parkinson's personality traits of A. Hitler II

- Teetotaller
- Non-smoker
- Ahedonic
- No tendency towards addictiveness
- Workaholic
- Difficult relationship with women
- Urge for ceremonial ritual procedures at political assembly meetings and sports events
- Obsessed by the idea to have been elected by fate to save Germany and Europe

Antisocial traits in the personality of Adolf Hitler

- Failure to conform to social norms
- Deceitfulness, repeated lying, using others for personal profit
- Impulsivity and irritability
- Aggressiveness, attacks of rage
- Failure to plan ahead
- Recklessness, disregarded for safety of self and others
- Consistent irresponsibility
- Lack of remorse, insight and empathy
- Inability to establish personal relationships
- Craving for recognition
- Megalomania

Summary of premorbid and morbid personality in PD I

- Special traits in Parkinson's personality can be discovered years before onset of the disease
- Problems in premorbid personality: pedantic behavior, mental rigidity, loner, teetotaller, introverted, workaholic
- Craving for recognition
- Excellent Co-workers
- Mostly not in a leading position
- In case of leading position: rigid and excessive, pedantic in realization

Summary of premorbid and morbid personality in PD II

- Fixation on life and professional program
- Failure to conform in social norms
- Failure to plan ahead

- As patients compliant, thankfully to physician
- Need of a consequent therapeutical program
- For the surrounding encumbering
- Development of dementia not common