The shock of the new! The introduction of physical methods of treatment in psychiatry in Britain and Europe, 1922-1944

Chester Medical School | University of Chester

Convulsive Therapy and Electroconvulsive Therapy; UK perspective from 1922-1944

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Seminar overview

- Patient centred threads throughout the presentation and insights to ECT
- Historical developments leading to clinical applications 1922-1944
- Our focus is on UK largely from late 1930s

Where did it all start?

- Paracelsus used camphor (Alam and Kamal, 2003).
- First published report of the use of seizure induction to treat mania using camphor was in 1785 - Weickhardt (Abrams 2002).
- Benjamin Franklin and Jan Igenhousz had recommended use of electricity (Beaudreau & Finger 2006).
- ECT as we know it today developed from early convulsive therapies in the 1930s (McCrae,2006).

In the 1920s and 1930s

- Psychiatrists began an experimental interventionist approach to treatment. Several new physical therapies were introduced.

Among the therapies were:

- Insulin coma therapy
- Chemical shock therapy
- Psychosurgery
- Electroconvulsive shock therapy

Ladilaus J. Meduna 1896-1964

Hungarian Neurolologist and Neuropathologist. Hungarian First Person to use convulsive therapy using Camphor/Cardiazol(Metrazol) 1934

CHEMICAL SHOCK THERAPY

- Meduna noted that the same people never had both epilepsy and schizophrenia. He speculated that this might be because epileptic convulsions (also known as seizures) prevented schizophrenia.
- In the 1930s, he tested his theory by inducing chemical convulsions in some patients with schizophrenia to see if their condition improved.
- 1930 Max Müller reported two cases of schizophrenia improving after epileptic fits; then Glaus remarked in 1931 on the near absence of epilepsy in 6000 schizophrenics (Kennedy, 1937)

- Ladislaus von Meduna in Budapest, on observing neurological differences between epileptics and schizophrenics in autopsy, postulated a theory of incompatibility in these conditions- Cardiazol was procured.
- Drs Gyula Nyïro and Jablonsky observed in 1929 that epileptics with psychotic features became lucid during periods of frequent fitting (colleagues of Meduna).
- Results from Meduna's (1935) first 26 patients reported 10 had completely recovered.

Convulsive Therapy in the UK

1934

McCrae (2006)

- ‘In the annals of psychiatric treatment, the advent of Cardiazol therapy has been afforded merely passing mention as a stepping-stone to the development of electroconvulsive therapy. Yet in the 1930s it was the most widely used of the major somatic treatment innovations in Britain’s public mental hospitals, where its relative simplicity and safety gave it preference over the elaborate and hazardous insulin coma procedure.’

1930

- Previously, psychiatry had been known for its therapeutic hopelessness.

Physical treatments

- Moorcroft House also appears to have hosted the first application of Cardiazol treatment, probably in early 1937. Freudenberg et al, noted that incidental seizures during insulin coma therapy boosted prospects of recovery, decided to supplement the regime by administering analeptic shocks on days when insulin was omitted (James, Freudenberg and Cannon, 1937).
- First public institutions to introduce convulsive therapy was either West Ham Mental Hospital in Essex (Gillies, 1937) or Three Counties Hospital at Arlesey in Bedfordshire(Lancet).

The Lancet, 17 July 1937

- Two brief reports suggested that the first public institution to introduce convulsive therapy was either West Ham Mental Hospital in Essex (Gillies, 1937) or Three Counties Hospital at Arlesey in Bedfordshire, where several months of use were reported by deputy superintendent Leonidas Finiefs (1937). Finiefs had begun using Cardiazol as an adjunct to insulin, after observing the latter treatment in Vienna. In April 1937, the London County Council funded a visit to Budapest by Leslie Cook, deputy medical superintendent at Bexley Hospital (1937), to observe the treatment.

Wilson and Rees 1937

- A dedicated Cardiazol ward was established on his return, and the authorities initially considered designating Bexley as a treatment centre(Kent), although the simplicity of the procedure made such specialization unnecessary. Annual Report for 1937, the Board of Control (1938) noted that convulsive therapy was proceeding at several institutions.
- Herbert Pullar-Strecker(1935) received a Medical Research Council grant to commence the treatment at the Royal Edinburgh Hospital.

The procedure

- Cardiazol treatment described in detail for a British audience by Alexander Kennedy in Journal of Mental Science (1937). As well as presenting methodological guidance from European pioneers, Kennedy referred to his own early experience as assistant medical officer at West Park Hospital(Epson). Production of fits – the raison d'être of treatment – depended on the substance rapidly reaching the central nervous system, as there was little cumulative action.

- The pupils would widen and stare. Clonic spasms lasted around 40 seconds, the patient being protected from injury by manual restraint. Incontinence was common. Patients then fell into a comatose sleep for about ten minutes, their recovery monitored by attendants. Optimum dose for each patient was found by trial and error.

- Fear before fit a particularly objectionable feature of Cardiazol therapy was an intense dread experienced by patients between injection and seizure. Although patients had no recollection of the fit itself, they often recalled overwhelming alarm during the preceding aura.

A Board of Control survey in late 1938

- reported shock treatments had commenced at 92 institutions, which 89 were using Cardiazol. Meanwhile, only 31 had introduced insulin therapy. While Cardiazol was readily embraced by British psychiatrists, introduction of insulin coma therapy, despite Wilson's encouraging report, was tentative.

Electro – Convulsive -Therapy

Ugo Cerletti 1877-1963

Born in Veneto Italy at Conegliano
Italian Neurologist

Chair of the Department of Mental and Neurological Diseases at the University of Rome 1935
Used Electricity to induce a seizure 1937.

Lucio Bini 1908-1964

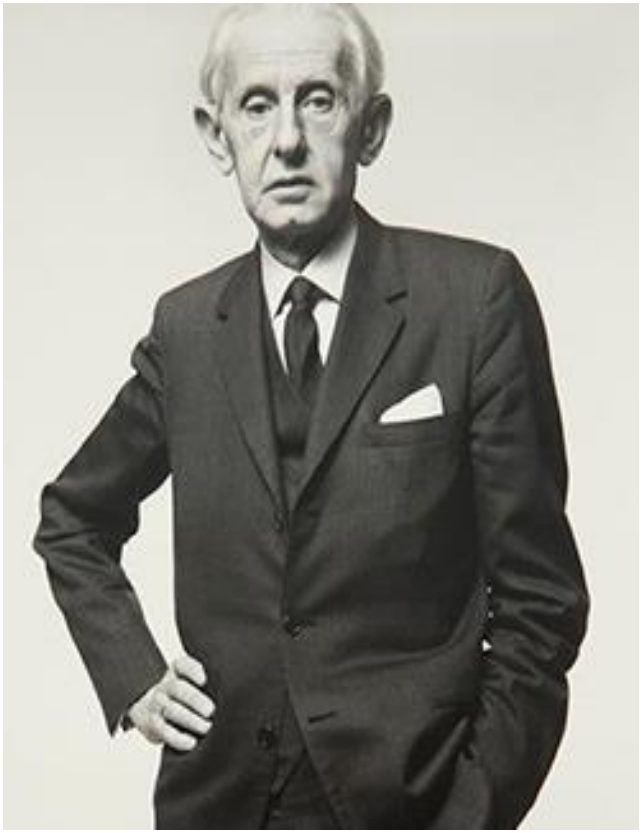
Born in Rome Italy

Italian Psychiatrist and
Professor
University of Rome

- A method of safe and effective treatment represented a tremendous breakthrough for a field whose sluggish progress once prompted Cerletti to call it a "funereal science."

Electro-Convulsive-Therapy in the UK

Electro-Convulsive Therapy in The UK



Lothar Kalinowsky 1899-1992

Psychiatrist-University Hospital of Rome. Demonstrated ECT in the UK at the Burden Neurological Institute.

(Lancet, 1939).

The UK played an important early role in the story of ECT

In 1939, Lothar Kalinowsky arrived in London from the continent, where he had been fleeing persecution (himself half Jewish). LK had been at Cerletti's clinic.

Thomas P Rees, superintendent of the Warlingham Park Hospital, became interested, and Rees and Kalinowsky asked the Solus Electric Company in London to build an ECT machine.

Independently of Kalinowsky . .

- In 1939 Frederick Golla, founding director of the Burtden Neurological Institute in Bristol, and his assistant Grey Walter, became interested in ECT. They commissioned another company, Edison Swan Electric, to build a machine, and treated 5 patients with psychosis from the Barnwood House asylum in Gloucester (machine set at 140 volts).

Early Days

- No anaesthetic
- No muscle relaxant
- Vigorous Seizures
- Teared Ligaments
- Spinal Fractures
- Long Bone Fractures

“Unmodified” ECT became modified to prevent spinal fractures

- 1941: Victor Gonda, who had emigrated from Budapest to Chicago, hyper-extended patients on a barrel stave and held down their shoulders and hips. This effectively prevented injuries.

1939

- Views on ECT were generally positive in the early days of its use. In the UK, Robert Russell set up a company, Ectron Ltd, to manufacture ECT machines. At one time, nearly every hospital in the UK was equipped with Ectron machines.

Wales

- Before the onset of ECT treatment, the main treatment for schizophrenia and depressive illnesses in the North Wales Hospital was Insulin shock treatment.
- 1941, NWH purchased ECT therapy apparatus. Although ECT was initially used in cases of schizophrenia, within a year Denbigh's medical superintendent reported 'its chief field of usefulness is amongst the Depressions'. The treatment was administered on an increasingly regular basis during the war years- 47 patients received ECT in 1941(Denbighshire Archives).

Scotland

- Royal Edinburgh Hospital - Mental and Nervous Disorders between the years 1930-48. N= 923 (608 female and 315 male patients).
- The use of E.C.T. does not seem to reduce the period of hospitalization to any significant degree.
- Time and time again it was demonstrated that patients discharged Recovered, and given an excellent prognosis, were admitted with a second depressive illness one, two, three or more years later(Karagulla, 1950).

1932-1940 Scotland

- First course of E.C.T. should not be given until six to eight weeks after admission, and that if this course is not effective, an interval of three months should be allowed to elapse before the giving of a second course. Some patients are made worse by E.C.T.
- Conclusion was that convulsion therapy is palliative rather than curative in its action

(Karagulla,1950).

- The true value revealed In the absence of an established therapeutic mechanism, the basis for a specific action on schizophrenia was weakened. The first report of an alternative application came from Verstraeten (1937) in Belgium, who declared that convulsive therapy produced most benefit not in schizophrenia but in affective psychoses, particularly depressive states. In fact, practitioners everywhere had been experimenting beyond the original target condition.

Harris and Birnie (1938)

- West Park found positive outcomes in stuporous cases whether schizophrenic or depressive. Convulsive therapy appeared particularly valuable in involutional melancholia, as, unlike the self-remitting tendency of other depressive disorders, sufferers commonly slid into perpetual gloom (Cook, 1944)

In 1944, Wladimir T. Liberson

- shortened the stimulus duration, which resulted in a reduction in post procedure aphasia, cognitive blunting, and recovery time. In 1952, Holmberg and Thesleff pioneered "modified" (anesthetized) ECT, which further improved patient comfort and tolerability (Liberson, 1948).

- ‘The very thought of it makes me shrink with horror’ uttered one of Gillespie’s patients at Holloway Sanatorium (1939: 391). Kennedy (1937), advised that patients be deterred from discussing their treatment afterwards, although Good (1940) found repression of the trauma common.

Karagulla, 1950

- Convulsion therapy frequently ameliorates symptoms and renders the illness more bearable, and it would therefore appear to act by stimulating the mechanisms which bring about spontaneous recovery.
- Increased knowledge regarding its mode of action may therefore lead to increased understanding of depression as a clinical entity.

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