CLINICAL COURSE OF ALCOHOL DEPENDENCE

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ABSTRACT

In 47 subjects having alcohol dependence syndrome, the progression of alcohol related milestones was studied in terms of age-at-onset of each milestone. The findings revealed a definable progression with three phases. The early phase, characterized by the absence of any problem, ended with the use of 1/4th bottle of spirit a day, more than once-a-week. The middle phase began with daily drinking, ended with the use of 1 bottle of spirit a day, and was characterized mainly by social problems. The late phase began with the onset of morning drinking, and was characterized by the addition of physical problems. These findings support the earlier research suggesting a definable progression of alcoholism. However the physiology identified by the present study is unlike that reported by some of the earlier research.

Key words: Alcoholism, courses, symptoms, men, jellinek

The study of the natural history of a syndrome has applications in terms of its definition, the assessment and prediction of its course, the assessment of the need for, and the effectiveness of the interventions, and in teaching others about the syndrome (Schuckit et al., 1993). In the case of alcohol dependence syndrome, Jellinek (1946) was the first researcher to chart out the natural history in terms of 46 'symptoms', sequentially ordered in 4 phases-pre-alcoholic, prodromal, crucial and chronic. Subsequently, whether based on Jellinek's symptoms or otherwise, a large body of research has been reported, covering both the genders (Jackson, 1957; Trice & Wahl, 1958; Park & Whitehead, 1973; Orford & Hawker, 1974; Mulford, 1977; Pokorny et al., 1981; Sundgren et al., 1986, Yeager et al., 1992; Schuckit et al., 1993). All this research is from the western countries.

Keeping in view the known cross-cultural variations and similarities in the patterns of drinking and the alcohol dependence (Helzer et al., 1990), the present study was planned as an exploratory attempt to find if the course of alcohol dependence in India is similar to that reported from the west.

MATERIAL AND METHOD

The subjects were selected from the male inpatients undergoing treatment at the drug-de-addiction and treatment centre, Department of Psychiatry, Postgraduate Institute of Medical Education and Research, Chandigarh. All the subjects had received a diagnosis of alcohol dependence syndrome as per the ICD-10 (WHO, 1992). The subjects having a significant physical psychiatric disorder, which could impair memory function, were excluded. The study was conducted at the end of the detoxification programme when the subjects were drug free. The subjects and one or more of their close family members were interviewed to obtain information regarding selected demographic features, family history, and the
course of alcoholism. The course of alcoholism was recorded as per a list of 25 items which covered various alcohol related milestones like quantitative progression and physical and psychosocial complication. The subjects and their family members were encouraged to discuss and arrive at a consensus for age-at-onset for each milestones. If any discrepancy emerged e.g. if pattern of use of a bottle a day was predated than the pattern of use of half a bottle a day, it was pointed out and resolved. In all, 47 subjects were taken up for the study.

The mean ages-at-onset for various alcohol related milestones were used to obtain a rank-order profile of their progression. In addition, the correlation between three drinking dyscontrol milestones (daily, daytime, and morning-drinking) and other specified physical and social milestones were studied.

RESULTS

Sample characteristics: The 47 subjects had age ranging from 22 to 57 (36.8±6.8 years) and education ranging from 0 to 18 years (10.2±3.6 years). Most of the subjects were married (81%), working (75%), and urban (70%). A positive family history was found for dependence on alcohol in 42.5% subjects.

| Milestones          | % (n=100) | Age (in years) | Rank order area-wise global |
|---------------------|-----------|----------------|----------------------------|
| **Quantitative**    |           |                |                            |
| 1. First drink      | 100       | 19.7 3.9       | 1 1                        |
| 2. 1/4 bottle a day | 100       | 25.4 5.7       | 2 3                        |
| 3. 1/2 bottle a day | 98        | 28.6 6.0       | 3 7                        |
| 4. 1 bottle a day   | 81        | 30.6 5.9       | 4 15                       |
| **Dyscontrol**      |           |                |                            |
| 5. Weekly drinking  | 100       | 23.1 5.4       | 1 2                        |
| 6. Daily drinking   | 100       | 26.7 7.2       | 2 4                        |
| 7. Daytime drinking | 96        | 29.7 7.7       | 3 9                        |
| 8. Stopped for 1 month | 62     | 29.8 6.9       | 4 10                       |
| 9. Passed out       | 70        | 29.9 6.0       | 5 11.5                     |
| 10. Stopped for 1 week | 77    | 30.1 7.9       | 6 13                       |
| 11. Morning drinking| 91        | 31.4 6.9       | 7 18                       |
| **Social**          |           |                |                            |
| 12. Lost job        | 28        | 27.6 5.9       | 1 5                        |
| 13. Drunken brawls  | 51        | 28.0 6.1       | 2 6                        |
| 14. Wife left for 1 month | 17  | 29.1 4.9       | 3 8                        |
| 15. Borrowed money  | 55        | 29.9 5.9       | 4 11.5                     |
| 16. Police contact  | 15        | 30.3 3.5       | 5 14                       |
| 17. Accident        | 53        | 30.7 6.0       | 6 16                       |
| 18. Absenteeism     | 83        | 30.8 7.0       | 7 17                       |
| **Physical**        |           |                |                            |
| 19. Blackouts       | 74        | 31.5 6.3       | 2 19                       |
| 20. Morning shakes  | 74        | 32.5 6.9       | 3.5 20.5                   |
| 21. Sex problems    | 8         | 32.5 7.9       | 3.5 20.5                   |
| 22. Memory lapses   | 51        | 33.4 6.9       | 5 22                       |
| 23. Delirium tremens| 23        | 33.7 7.7       | 6 23                       |
| 24. Hospitalization | 36        | 35.2 7.7       | 7 24                       |
| 25. Convulsions     | 7         | 41.7 1.1       | 8 25                       |

TABLE 1
MEAN AGE-AT-ONSET AND RANK ORDER OF ALCOHOL RELATED MILESTONES
dependence on substance other than alcohol in 8.5% and abuse of alcohol or other substances in 64%. Also 34% subjects had other associated psychiatric disorders.

Frequency of milestones: While 81% subjects were using one bottle of spirits a day, only 2% subjects reported using less than half a bottle a day; 96% and 91% subjects respectively reported daytime and morning drinking; 70% subjects reported passing out when drunk; 83% subjects reported absenteeism and, 28% reported loss of job; between 55% and 51% subjects reported borrowing money, having accidents or drunken brawls; 17% subjects reported the wife having left them for more than a month: 15% subjects reported being picked up by the police; 74% subjects each reported blackout and morning shakes; memory lapses were reported by 51% subjects, while hospitalization was reported by 38% subjects and delirium tremens by 23% subjects; only 8% and 7% subjects reported sexual problems and seizures respectively (table 1).

General progression of milestones: For all the milestones together, rank ordering by age-at-onset revealed that the social milestones emerged only after the onset of the use of 1/4th bottle of spirit daily (rank 3) and of daily drinking (rank 4). Out of the social and physical milestones, the social milestones emerged early (rank 5) and got added on gradually (ranks 6, 8, 11.5, 14, 16 & 17); the physical milestones emerged late i.e. after the onset of drinking on a bottle of spirit daily (rank 15) and morning drinking (rank 18) and later accumulated rapidly (ranks 19-25) (table 1).

Relative progression of milestones: Calculated from the mean age-at-onset, in quantitative terms the drinking peaked in 11 years-the progression getting accelerated with time i.e. from first drink at 19.7 years, to 1/4th bottle of spirits a day in 6 years, to 1/2 bottle of spirit a day in another 3 years and, to 1 bottle of spirit a day in another 2 years. Similarly, the progression of drinking dyscontrol also got accelerated with time i.e. from first drink to daily drinking in 7 years, to daytime drinking in another 3 years and to morning drinking in another 2 years. Comparatively, the progression of social milestones occurred rapidly between the 9th and 12th years of drinking career, following the onset of daily drinking. While the progression of physical milestones occurred rapidly between the 13th and 18th years of drinking career, (table 1).

Correlations between specified milestones: The correlation coefficients between age-at-onset of three drinking dyscontrol milestone i.e. daily, daytime, and morning-drinking, and certain social & physical milestones revealed that the correlations were highly significant (p<0.001) between all the three drinking dyscontrol milestones and job loss, drunken brawl, borrowing money for drinks, absenteeism, blackouts, morning shakes, memory lapses and hospitalization; more significant between delirium tremens and, daytime-, and morning-drinking (p<0.001) than between delirium tremens and daily-drinking (p<0.01); more significant between accident and daytime-drink-

| Milestones | Drinking dyscontrol |
|------------|---------------------|
|            | Daily drinking | Daytime drinking | Morning drinking |
| Social     |               |                  |                  |
| Lost job   | 0.76**         | 0.87**           | 0.74**           |
| Drunken brawls | 0.66**       | 0.79**           | 0.66**           |
| Borrowed money | 0.76**        | 0.78**           | 0.75**           |
| Absenteeism | 0.67**         | 0.61**           | 0.77**           |
| Accident   | 0.46           | 0.71**           | 0.61**           |
| Wife left for 1 month | 0.88*      | 0.78             | 0.78             |
| Police contact | 0.94*         | 0.69             | 0.56             |
| Physical   |               |                  |                  |
| Blackout   | 0.72**         | 0.78**           | 0.83**           |
| Morning shakes | 0.75**        | 0.85**           | 0.85**           |
| Memory lapse | 0.68**        | 0.81**           | 0.85**           |
| Hospitalization | 0.72**     | 0.76**           | 0.74**           |
| Delirium tremens | 0.76**    | 0.90**           | 0.95**           |

*p <0.01, **p <0.001
ing (p<0.001) than between accident and morning-drinking (p<0.01), and insignificant between accident and daily-drinking; less significant between separation from spouse and police contact and daily-drinking (p<0.01), and insignificant between separation and police contact and daytime and morning-drinking (table 2).

**DISCUSSION**

Even though the bulk of evidence favours the existence of a sequential pattern to progression of alcoholism, the research has often held as either partly or fully invalid the symptoms sequencing, especially as given by Jellinek (Sundgren et al., 1986; Yeager et al., 1992). This diversity of findings can be attributed to a large extent to methodological and sampling differences. The earlier research has variably used some or all of Jellinek's symptoms and/or other symptoms chosen by different researchers. The progression sequencing was either based on recall of age-at-onset of some symptoms (which, in turn, influenced the reporting of other symptoms) or, by rank ordering of symptoms independent of age-at-onset. The subjects were recruited from alcoholic anonymous programmes: from inpatients or outpatients from deaddiction clinics: and from post-treatment groups, or through newspaper advertisements.

Since the present study was conceived only as an exploratory work, we decided to keep the symptom list short, and to include more of symptoms which could be more easily identified and recalled by the subjects as well as the family members. Thus our list has 12 milestones which had similarity with 11 and 9 symptom listed by Schuckit et al. (1993) and Jellinek (1946) respectively (table 3). In view of the availability of the family members to cross-check the patient's efforts at charting out the symptoms, we opted for age-at-onset, rather

| Milestones | Rank order | Mean age (years) |
|------------|------------|------------------|
|            | P | S | J | P | S |
| Lost Job (P), Fired (S) | 1 | 8 | 4 | 27.6 | 34.6 |
| Drinking : Daytime (P), Before noon (S) | 2 | 1 | - | 29.7 | 29.7 |
| Stopped for 1 month (P), Abstained to control (J) | 3 | - | 3 | 29.8 | - |
| Police contact (P), Public intoxication arrest (S) | 4 | 2 | - | 30.3 | 30.4 |
| Jailed (S) | - | 3 | - | - | 30.6 |
| Driving arrest (S) | - | 7 | - | - | 33.3 |
| Accident (P), Auto accident (S) | 5 | 5 | - | 30.7 | 32.0 |
| Morning drinking (P), Uses eye openers (J) | 6 | 7 | 7 | 31.4 | - |
| Blackout (P,S,J) | 7 | 4 | 1 | 31.5 | 31.2 |
| Frequent blackout (J) | - | - | 2 | - | - |
| Morning shakes (P,S), Shakes (J) | 8.5 | 6 | 9 | 32.5 | 32.8 |
| Sex problems (P), Sex drive decreases (J) | 8.5 | - | 6 | 32.5 | - |
| Delirium tremens(P), Hallucinations(S), Alcoholic psychosis (J) | 10 | 9 | 8 | 33.7 | 36.7 |
| Hospitalization (P,S,J) | 11 | 11 | 5 | 35.2 | 40.8 |
| Convulsions (P,S) | 12 | 10 | - | 41.7 | 40.0 |

P-present study; S-Schukit et al., 1993; J-Jellinek, 1946.
than rank ordering, for symptom sequencing. To rule out the effects of intoxication, withdrawal, medication etc., the assessment was done at end of the detoxification programme when the subjects were drug-free and after ruling out conditions that could cause memory impairment.

The demographic profile of our study subjects was similar to that of the alcohol dependent patients attending our centre (PGIMER, 1993).

In terms of the frequency of milestones our subjects were similar to those of Schuckit et al. (1993) for physiological milestones like daytime/morning-drinking, accident, blackouts, morning shakes and convulsions; but our subjects reported job loss, separation/divorce, police contact and hospitalization much less often. These differences can be attributed to the differences in the social norms.

The sequencing of symptoms by Jellinek (1946) had given four phases: pre-alcoholic, prodromal, crucial and chronic. The last three phases were heralded by the onset of three specific symptoms: blackout, loss of control and binges of prolonged intoxication. Our list of milestones also produced three phases: early, middle and late. The early phase began with the first drink, extended through weekly drinking and ended at the use of 1/4th bottle of spirits a day. The middle phase started with daily drinking, extended through 'social' complications and ended with the use of 1 bottle of spirits a day. The late phase was heralded by morning drinking, extended through various 'physical' complications, and ended with the convulsions. These phases and the phases given by Jellinek (1946) do not match e.g. whereas Jellinek reported blackout to be the first symptom of prodromal phase, we found blackout to be an early symptom of the late phase. The differences may be attributed to the differences in the symptom lists and/or the sample subjects.

The sequencing of 12 milestone from our study shows that their rank orders are within ±2 ranks for 7 and 5 milestones respectively compared to the similar symptoms listed out by Schuckit et al. (1993) and Jellinek (1946) - (table 3).

The more or less uniform distribution of very high correlations between the ages-at-onset of drinking dyscontrol milestones (daily-, daytime-, and morning-drinking) and other alcohol related social and physical milestones suggests that the progression is predictable to a large extent and that daily drinking is a strong early indicator of a problem-drinking pattern setting in.

To summarize, this study lends credence to the presence of a definable symptom progression and its phaseology in alcohol dependence syndrome. Within the limitations of the methodological differences, we found a phaseology which is distinct and different from the one reported by Jellinek (1946). Studies with larger samples need to be conducted to substantiate or refute the findings of this preliminary research.

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CLINICAL COURSE OF ALCOHOL DEPENDENCE

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