



## ASSESSMENT OF ALCOHOLIC FLUSH REACTION IN DIFFERENT PEOPLE WHO ARE REGULAR IN ALCOHOL AND MEASURES TO REDUCE ALCOHOLIC FLUSH

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### ABSTRACT

Alcoholic flush syndrome is a condition in which the individuals develop flushes or blotches associated with erythema on face, neck, shoulders etc. This reaction is a result of accumulation of acetaldehyde, a metabolic byproduct of catabolic metabolism of alcohol.

**Materials and methods, Study method:** This was a prospective observational study conducted for 14 months (June 2016-August 2017) in three tertiary care hospitals.

**Study site:** The study was conducted in three tertiary care hospitals (of which one was 500 bedded and two were 300 bedded) and few rural areas.

**Study procedure:** The study was done by collecting information from patient case sheets, from the patients and the patient care givers, based on the data a questionnaire is prepared. Nearly data of 702 chronic alcoholics was taken into consideration, of which only 639 people cooperated and provided the information.

**Study duration:** The study was conducted for fourteen months (June 2016 – August 2017)

**Results:** The data of 639 people was collected who were chronic alcoholics of which males were 421 and females were 218 and the most effected age group was found to be 25-35years. They were having the complaints of headache, nausea, vomiting, erythema of face and general physical discomfort. The complications of chronic alcoholism are cirrhosis, hepatitis, esophageal cancer, chronic gastritis and others. These people are chronic alcoholics who always depend upon alcohol to do all the work.

**Discussion:** Out of 639 people, the maximum were males who consume alcohol due to their financial issues, discomfort in hormone and psychological illness. The main symptoms observed with alcohol poisoning were nausea (21.12%), erythema of face (16.58 %), slurred speech(12.98% ), stooper(11.42% ) and other symptoms like delayed reflexes, profuse sweating, loss of consciousness, tremors were observed.

**Conclusion:** Our study concluded that, all the people who were chronic alcoholics highly suffered with alcoholic flush syndrome. Government should take measures to avoid sale of alcohol to below 30 years of age people and the concentration of alcohol should be minimized and several awareness programs or camps should be conducted. As clinical pharmacists, we should provide utmost information to the chronic alcoholics and counsel them regarding complications and adverse effects occur in future.

**KEYWORDS :** Alcoholic Flush, catabolic metabolism, cirrhosis, hepatitis.

### Introduction:

Alcohol flush reaction also known as Asian flush syndrome is a condition which develops flushes associated with erythema on the face, neck, shoulders and in some cases, the entire body after consuming alcoholic beverages.

The main method that the body metabolizes alcohol is dependent on two enzymes:

1. Alcohol dehydrogenase which first converts alcohol into acetaldehyde and
2. Acetaldehyde dehydrogenase (ALDH2) which breaks down acetaldehyde into harmless compounds.

But due to deficiency or mutation in acetaldehyde dehydrogenase enzyme (ALDH2), acetaldehyde gets accumulated in the body which causes blood vessels to dilate and the face to turn red. The other symptoms most commonly seen are nausea, vomiting, headache, increased heart beat etc., The persons with alcohol flush reaction have a higher risk of getting stomach or esophageal cancer or peptic ulcers due to a genetic inability to efficiently process acetaldehyde.

### Materials and methods:

**Study design:** The study was a prospective observational study conducted for fourteen months (June 2016-August 2017) in three tertiary care hospitals.

**Study population:** The study was done in the patients of 3 tertiary care hospitals and of few rural areas.

**Study procedure:** The study was done by collecting information from patient case sheets, from the patients and the patient care givers, based on the data a questionnaire was prepared. Nearly data of 702 chronic alcoholics was taken into consideration, of which only 639 people cooperated and provided the information.

**Sampling method:** All patients of age between 18 to 60 who were chronic alcoholics were taken for study.

**Study duration:** The study was conducted for 14 months (June 2016 – August 2017)

**Inclusion criteria:** The people who were chronic alcoholics of age between 18 to 60 years were included and of both sexes.

**Exclusion criteria:** Who were not interested in giving information, pediatrics, pregnancy and lactating mothers.

### Study material:

**Patient consent form:** Consent was collected by using self designed patient consent form and consent was made into three languages English, Telugu, Hindi.

**Ethical approval:** The study was approved by institutional and hospital's ethical committee.

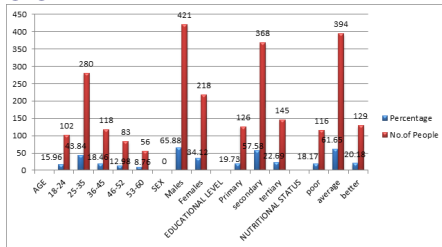
**Data analysis:** The data of demographics, side effects of alcohol, complications, withdrawal treatments and aids for cessation of alcohol was analyzed. Complications, side effects of alcoholism, treatment measures was analyzed by statistical software's and the data was analyzed by using ms – excel and result was given by percentage.

**Results:** Out of 702 people, 639 people provided the information regarding their demographic details and the nature of living with the reason of alcohol consumption and side effects, complications treatment, therapies and aids was analyzed and the data was tabulated as shown below.

**Table 1: Demographic details of people**

| Demographics              | No. of people | Frequency (%) |
|---------------------------|---------------|---------------|
| <b>Age</b>                |               |               |
| 18 – 24                   | 102           | 15.96         |
| 25 - 35                   | 280           | 43.84         |
| 36 – 45                   | 118           | 18.46         |
| 46 – 52                   | 83            | 12.98         |
| 53 – 60                   | 56            | 8.76          |
| <b>Sex</b>                |               |               |
| Males                     | 421           | 65.88         |
| Females                   | 218           | 34.12         |
| <b>Educational level</b>  |               |               |
| Primary                   | 126           | 19.73         |
| Secondary                 | 368           | 57.58         |
| Tertiary                  | 145           | 22.69         |
| <b>Nutritional status</b> |               |               |
| Poor                      | 116           | 18.17         |
| Average                   | 394           | 61.65         |
| Better                    | 129           | 20.18         |

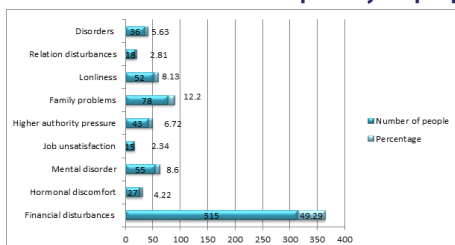
**Table 1: Shows the demographic details of the patients including age, sex, educational level and nutritional status.**



**Table 2: Shows the reason for alcohol consumption by the people below are the main reasons for alcoholic consumption**

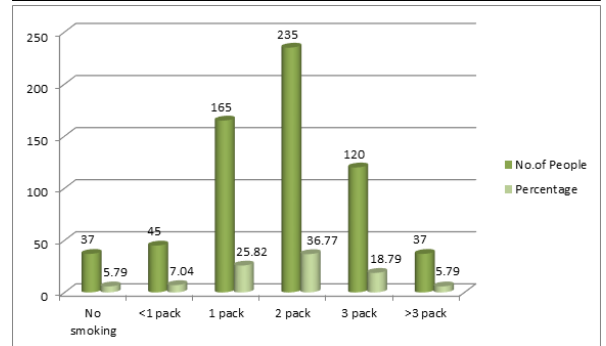
| Reason for alcohol consumption | Number of people | Frequency |
|--------------------------------|------------------|-----------|
| Financial disturbances         | 315              | 49.29     |
| Hormonal discomfort            | 27               | 4.22      |
| Mental disorder                | 55               | 8.60      |
| Job unsatisfaction             | 15               | 2.34      |
| Higher authority pressure      | 43               | 6.72      |
| Family problems                | 78               | 12.20     |
| Lonliness                      | 52               | 8.13      |
| Relation disturbances          | 18               | 2.81      |
| Disorders                      | 36               | 5.63      |

**Table 2: Shows reason for alcohol consumption by the people**



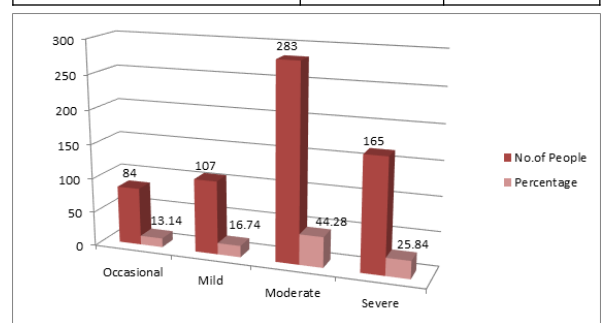
**Table 3: Shows the smoking habit of the persons and number of cigars per day is reported with readings.**

| Cigars in packs | No. of people | Frequency (%) |
|-----------------|---------------|---------------|
| No smoking      | 37            | 5.79          |
| <1 pack         | 45            | 7.04          |
| 1 pack          | 165           | 25.82         |
| 2 pack          | 235           | 36.77         |
| 3 pack          | 120           | 18.79         |
| >3 pack         | 37            | 5.79          |



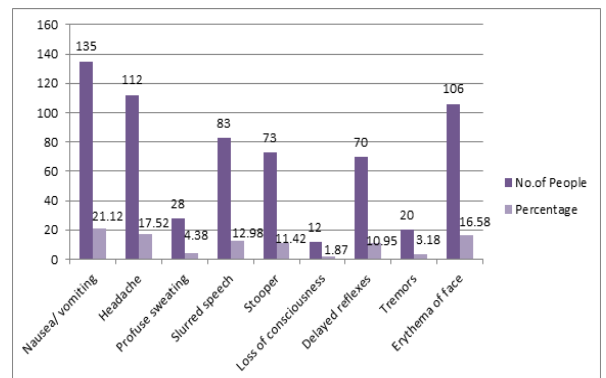
**Table 4: Shows the alcohol consumption by the people based on the situation was reported**

| Type of alcohol consumption | No. of people | Frequency (%) |
|-----------------------------|---------------|---------------|
| Occasionally                | 84            | 13.14         |
| Mild                        | 107           | 16.74         |
| Moderate                    | 283           | 44.28         |
| Severe                      | 165           | 25.84         |



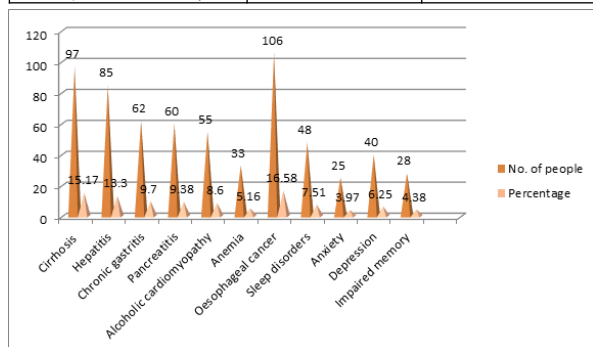
**Table 5: Shows the side effects observed due to alcohol consumption during the period.**

| Side effects          | No. of people | Frequency (%) |
|-----------------------|---------------|---------------|
| Nausea/ vomiting      | 135           | 21.12         |
| Headache              | 112           | 17.52         |
| Profuse sweating      | 28            | 4.38          |
| Slurred speech        | 83            | 12.98         |
| Stooper               | 73            | 11.42         |
| Loss of consciousness | 12            | 1.87          |
| Delayed reflexes      | 70            | 10.95         |
| Tremors               | 20            | 3.18          |
| Erythema of face      | 106           | 16.58         |



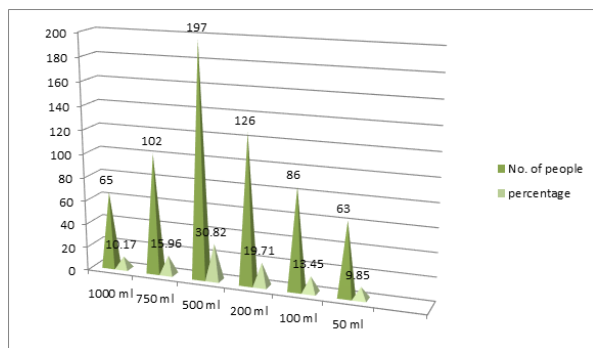
**Table 6: Indicates the complications observed during the period of alcohol consumption or after cessation for few days.**

| Type of complication     | No. of people | Frequency (%) |
|--------------------------|---------------|---------------|
| Cirrhosis                | 97            | 15.17         |
| Hepatitis                | 85            | 13.30         |
| Chronic gastritis        | 62            | 9.70          |
| Pancreatitis             | 60            | 9.38          |
| Alcoholic cardiomyopathy | 55            | 8.60          |
| Anemia                   | 33            | 5.16          |
| Oesophageal cancer       | 106           | 16.58         |
| Sleep disorders          | 48            | 7.51          |
| Anxiety                  | 25            | 3.97          |
| Depression               | 40            | 6.25          |
| Impaired memory          | 28            | 4.38          |



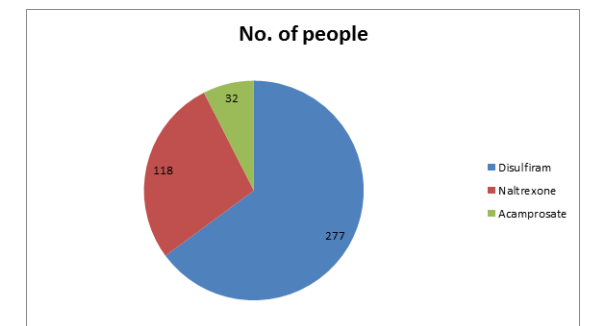
**Table 7: Consumption of alcohol (ml)**

| Alcohol consumed by the individual in milliliters | No. of people | Frequency (%) |
|---|---------------|---------------|
| 1000 ml   | 65            | 10.17         |
| 750 ml  | 102           | 15.96         |
| 500 ml  | 197           | 30.82         |
| 200 ml  | 126           | 19.71         |
| 100 ml  | 86            | 13.45         |
| 50 ml   | 63            | 9.85          |



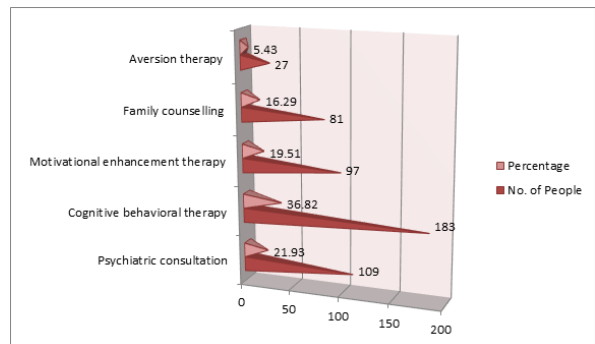
**Table 8: Indicates the treatment given for alcohol cessation with different classes of drugs.**

| Drugs       | No. of people | Frequency (%) |
|-------------|---------------|---------------|
| Disulfiram  | 277           | 64.87         |
| Naltrexone  | 118           | 27.64         |
| Acamprosate | 32            | 7.49          |



**Table 9: Shows the counseling measures to be taken for alcoholic cessation and suggestions.**

| Counseling to avoid alcohol        | No. of People | Frequency (%) |
|------------------------------------|---------------|---------------|
| Psychiatric consultation           | 109           | 21.93         |
| Cognitive behavioral therapy (CBT) | 183           | 36.82         |
| Motivational enhancement therapy   | 97            | 19.51         |
| Family counseling                  | 81            | 16.29         |
| Aversion therapy                   | 27            | 5.43          |



**Disulfiram – Ethanol reaction:**

| GIT            | CNS            | CVS         | Skin     | RS         |
|----------------|----------------|-------------|----------|------------|
| Abdominal pain | Blurred vision | Syncope     | Sweating | Tachypnoea |
| Nausea         | Confusion      | Hypotension | Flushing |            |
| Vomiting       | Vertigo        | Tachycardia | Pruritus |            |
|                | Headache       | Arrhythmias |          |            |
|                | Weakness       | Chest pain  |          |            |

**Aids for alcoholic cessation:**

- Face to face counseling
- Home detox services (DAWN & ADIS)
  - DAWN – Drug and alcohol withdrawal network
  - ADIS\_ Alcohol and drug information services
- The bridge programme
- Aversion therapy
- Sobrexia - block cravings and allow the alcoholic to overcome temptation and prevent relapse.
- Baclofen–reduce the symptoms of severe alcohol withdrawal symptoms in alcoholic patients
- Varenicline (anti smoking drug) – significantly reduce alcohol consumption and craving
- Psychiatric consultation
- Behavioural therapy
  - Cognitive behavioural therapy
  - Motivational enhancement
  - Marital and family counseling
- Alcoholic anonymous(AA) programme

**Discussion:** Out of 702 people, 639 people are interested to give the information of which maximum were males 421 (65.58%), females 218 (34.12%), educational level of secondary 368 (57.58%), Nutritional status of mainly average 394 (61.65%) and reason for consumption is due to financial disturbances 315 (49.29%), smoking to reduce the stress and during consumption they use to light maximum of 2 packs per day 235 (36.77%), and minimum of 500ml 283 (44.28%) consumed by the people to overcome the stress is of moderate. The side effects due to alcohol were mainly nausea and vomiting 135 (22.12%) and headache of 112 (17.52%). Complications occurred due to alcohol were esophageal cancer 106 (16.58%) and liver cirrhosis 97 (15.17%). The treatment given for alcohol cessation is mostly disulfiram 277 (64.87%). The counseling techniques are followed to avoid alcohol. The most commonly followed counseling technique in these patients was CBT (36.82%) and aids for alcohol cessation was discussed.

**Conclusion:** Our study concluded that the people who are suffering with alcoholic flush syndrome mainly were males due to their financial problems and the stress facing in their life. To get relieve

from the problems, the people are highly addicted to alcohol and faced several side effects and complications due to over alcohol consumption. Our government should take measures and provide awareness programs about stoppage of over usage of alcohol which makes the life better. Unemployment is also one of the common reasons for alcohol consumption. As clinical pharmacists, we should provide utmost information to the chronic alcoholics and counsel them regarding complications and adverse effects occur in future several researches want to take place about alcoholic flush.

#### **Acknowledgement:**

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