

A PROSPECTIVE STUDY OF STROKE IN AN URBAN SOUTH INDIAN POPULATION

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AIMS

1. To conduct a prospective study of the risk factors of stroke, specifically hypertension, diabetes mellitus, smoking and alcohol in order to clarify inconsistencies in previous retrospective studies.
2. To document treatment options in the acute stage of stroke
3. To investigate relationships between treatment choices and risk factors.

RATIONALE

Stroke is a global health problem and is a leading cause of adult disability.¹ Risk factors include increasing size of ageing population, hypertension (HT), diabetes mellitus (DM), alcohol, tobacco use, unhealthy diet, physical inactivity, and obesity. In south Indian urban populations, the roles of alcohol and smoking as risk factors for stroke have been less consistent than DM and HT. Three retrospective epidemiological studies of stroke conducted from 2002-2008 with a total sample size of 883 subjects by the same research group found a highly variable association between smoking, alcohol use and stroke. Study 3 (2004-2008, n=500): 33% alcohol use, 20% smoking; Study 2 (2002-2004, n=113): 28% & 18% respectively, but Study 1 (2002-2004; n=370) reported a joint finding of 1.8% of alcohol & smoking. Furthermore, none of the studies examined factors affecting treatment choice. Therefore, a prospective study of risk factors & treatment of stroke was planned given the limitations on the validity of retrospectively obtained data.

METHODS

SUBJECTS

- Only subjects with intraparenchymal ischaemic or haemorrhagic stroke were recruited from the ICU and wards of VHS Medical Centre, Chennai.
- Subjects with extraparenchymal stroke, other neurological and/or psychiatric disorders were excluded.

DATA COLLECTION

- Informants were patients and their close relatives.
- The WHO Stroke Steps Questionnaire & NeuroDBase, a print and electronic medical report system developed by The Institute of Neurological Sciences, VHS were used

RESULTS

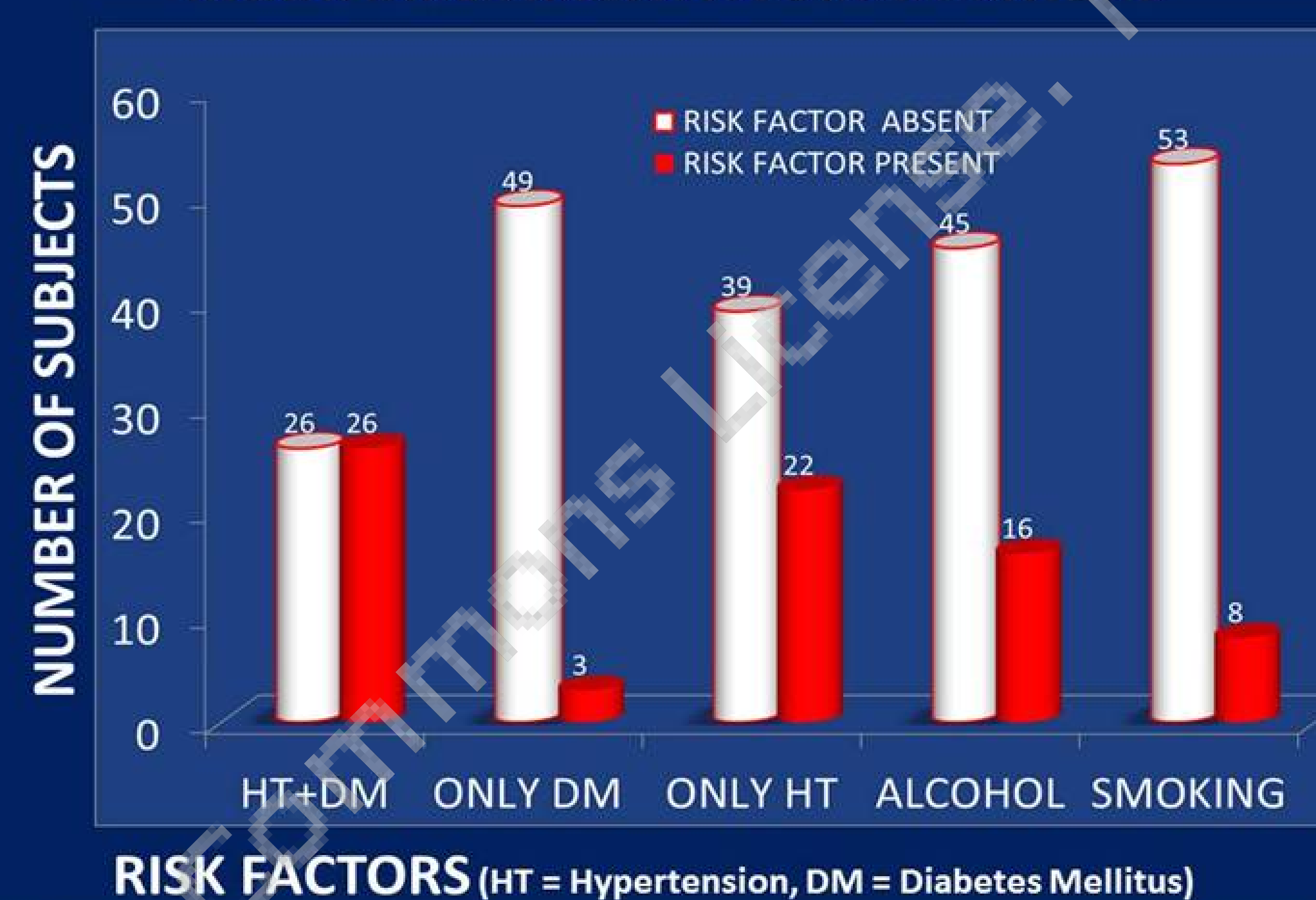
DEMOGRAPHIC	N	%
SAMPLE SIZE		
TOTAL ADMISSIONS	200	
STROKE	61	30.5
STROKE TYPE		
ISCHAEMIC	57	93.44
HAEMORRHAGIC	4	6.56
STROKE SIDE		
LEFT	27	44.26
RIGHT	32	52.45
BILATERAL	2	3.27
GENDER		
MALE	40	65.5
FEMALE	21	34.5

NON-MODIFIABLE RISK FACTORS IN STROKE.

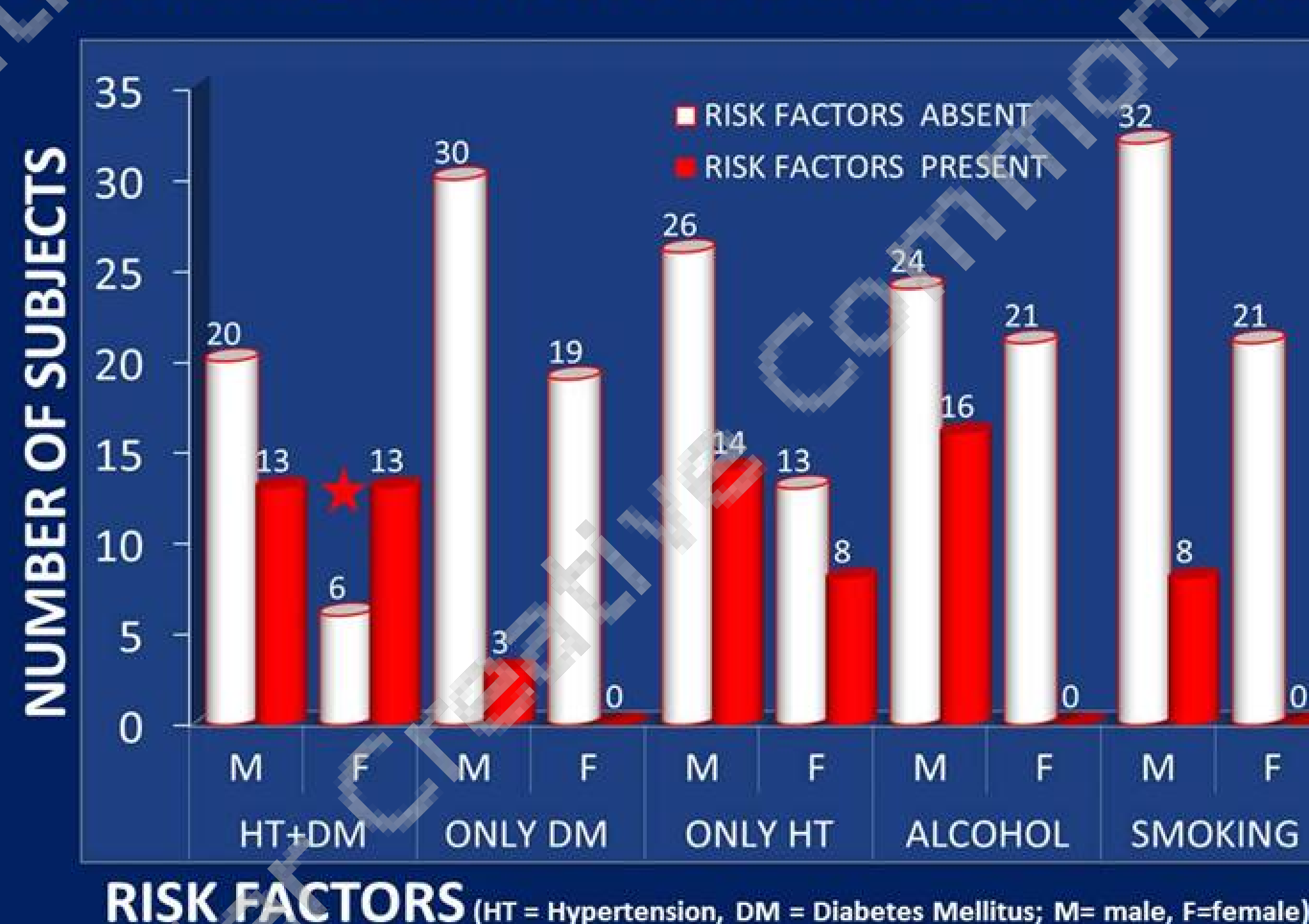


Group mean age = 61.9 (SD=11.4). Males = 60.6 (SD=11.8). Females = 64.38 (SD=10.44).

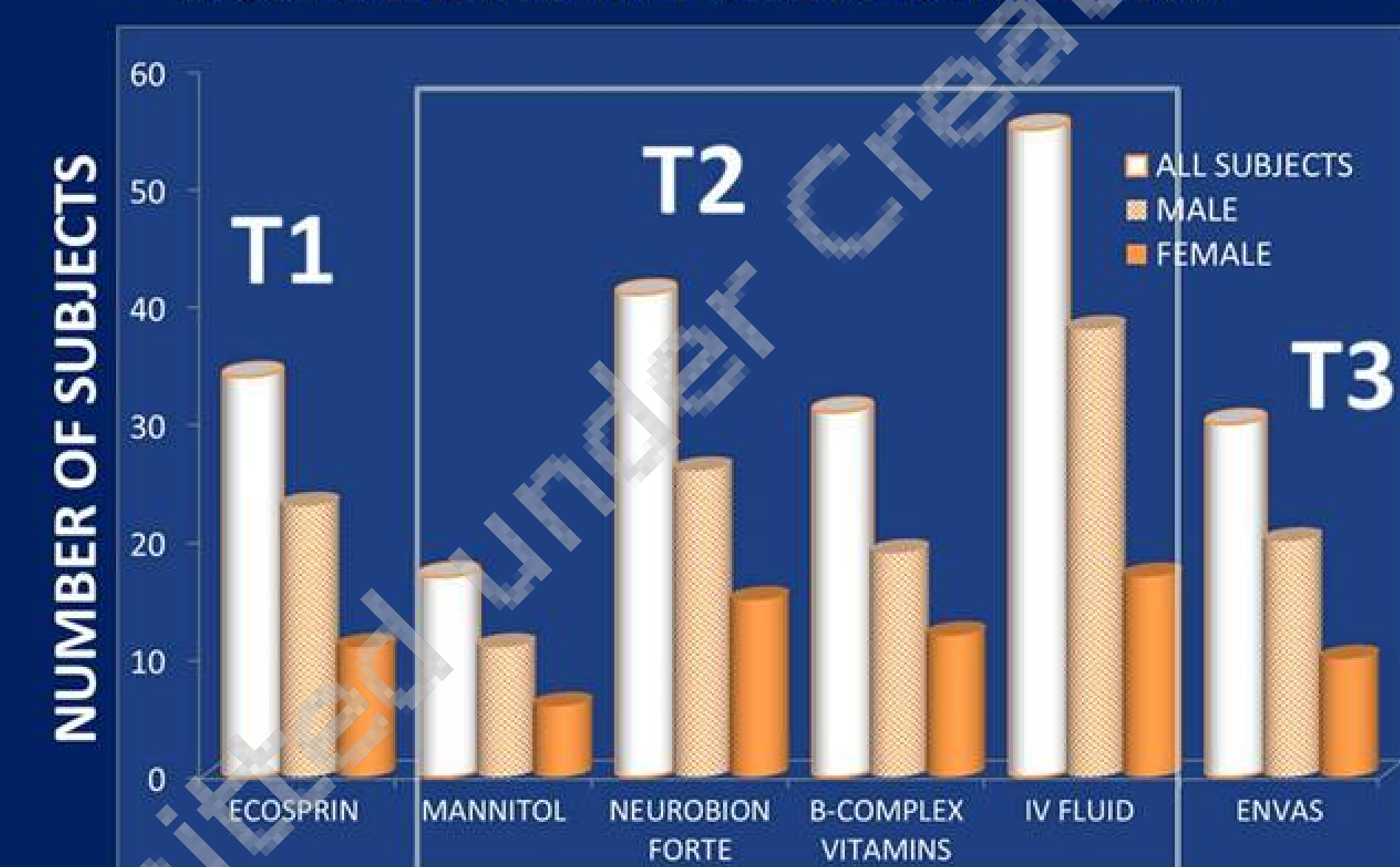
MODIFIABLE RISK FACTORS IN STROKE



MODIFIABLE RISK FACTORS & GENDER IN STROKE



ACUTE TREATMENT CHOICES IN THE ICU



- T1 treatment choice is antiplatelet, e.g., Ecosprin.
- T2 treatment choice is anti-edema and neuroprotective, including Mannitol, Neurobion Forte, B-complex vitamins & IV fluids
- T-3 is risk-factor specific treatment, e.g., anti-hypertensive treatment with Envas.

AWARENESS OF GOLDEN PERIOD IN STROKE

- None of the patients were aware of the 4-hour golden period following onset of stroke symptoms where thrombolytic therapy is most efficacious.
- 48/61 subjects clearly remembered onset of their symptoms.
- Mean time from onset to ICU admission was 78.82 hrs (SD =100.99), with shortest interval of 1.5 hours and longest of 15 days.

CONCLUSIONS

- Age is the strongest risk factor for stroke and it is non-modifiable
- Combination of hypertension and diabetes makes women more susceptible to stroke than individually (chisquare =4.06, p=0.04).
- Only male subjects (40/61), reported alcohol use (40%) and smoking (20%) in comparison to 32% combined HT & DM, 7% only DM and 35 % HT. 5 male subjects reported quitting alcohol use >6 months before stroke onset.
- Prevention of modifiable risk factors, particularly in women cannot be overemphasized.
- Patients and their families are unaware of the golden period of thrombolytic efficacy, thus reducing the chances of using it as an acute treatment option.
- Late arrival at the ICU may influence choice of anti-platelet, anti-edema and anti-risk factor treatment.
- Greater awareness and education is necessary.

References

1. Donnan GA, Fisher M, Macleod M, Davis SM. Stroke Lancet. 2008;371:1612-1623.
2. Strong K, Mathers C, Bonita R. Preventing stroke: saving lives around the world. Lancet Neurol. 2007;6:182-187.
3. World Health Organization. The World Health report 2004: changing history. Geneva: WHO, 2004.
4. Bonita R, Mendis S, Truelsen S, Bogousslavsky J, Toole J, Yatsu F. The global stroke initiative. Lancet Neurol. 2004;3:391-393.
5. WHO STEPS Stroke Manual: the WHO STEPwise approach to stroke surveillance / Noncommunicable Diseases and Mental Health, World Health Organization. 2005