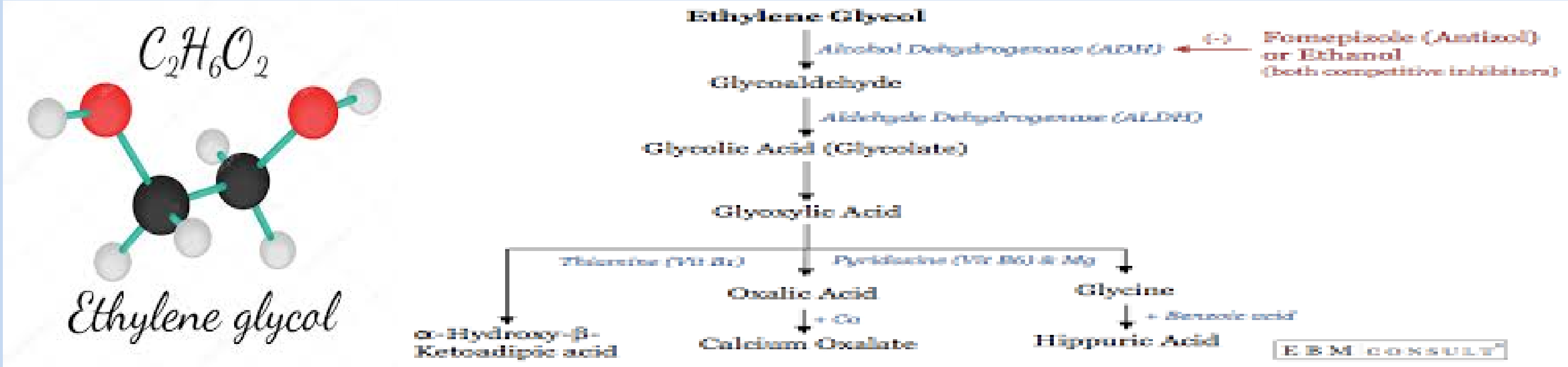


Background:

Ethylene glycol poisoning is clinically significant due to the associated risk of severe morbidity or lethality and it continues to occur in many countries. Despite the prevalence and severity of ethylene glycol poisoning, there is a paucity of studies that analyze prognostic factors.

This study aims to determine the predictive value of selected factors on the outcomes of death and prolonged renal insufficiency in ethylene glycol poisoned patients.



Patients & Methods:

A retrospective descriptive study was performed, in two university hospitals from N-E region of, Romania, during five years period. Patient's included were diagnosed with ethylene glycol intoxication or declared at admission toxic alcohols ingestion. We assessed the predictive value of selected factors on the outcomes of death and prolonged renal failure (RF) from ethylene glycol poisoning and other factors which may have influenced the evolution.



Data collection:

The selection of cases was based on the diagnosis received on admission, patients or witness's statements and the confirmation of laboratory tests. Our study included: **46 men** and **10 women**.



Results & discussion:

GENDER

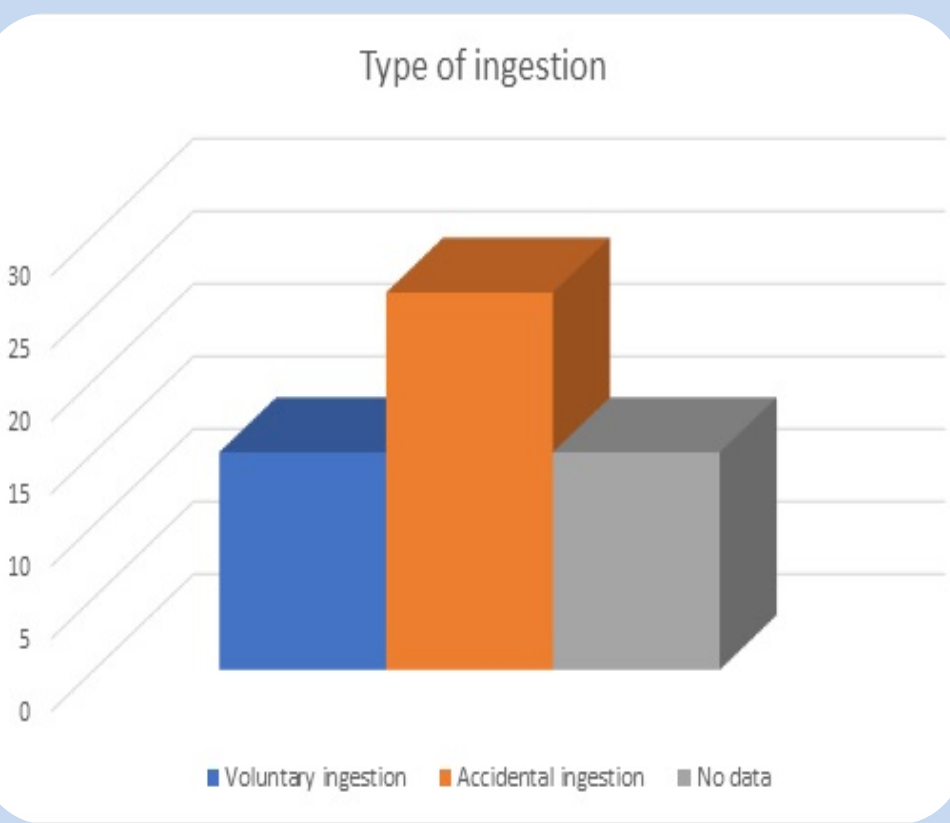
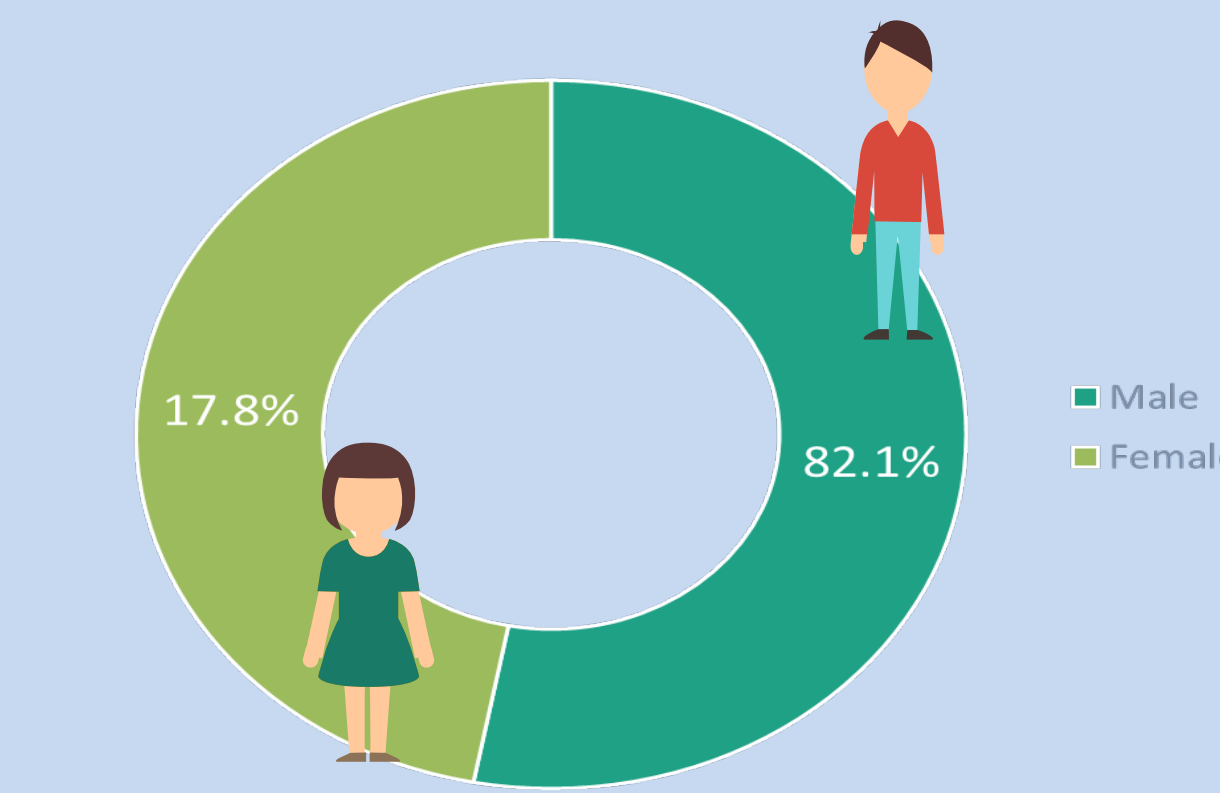


Table 1: Clinical and laboratory characteristics of 56 patients with ethylene glycol poisoning

	All patients (56)	Dialysis treatment (DT) (28)	Antidotal treatment (AT) (28)	P value
Age, years	51.39 (23-90) SD 15.35	49.28 (23-90) SD 15.26	53.5 (25-87) SD 15.42	P=0.035
Gender, male	46 (82.1%)	22 (78.57%)	24 (85.71%)	P=0.82
EG /ml	188.9 (10-1000) SD 220.63	318 (50-1000) SD 310.45	124 (10-500) SD 127.21	P=0.03
pH	7.15 (6.60-7.46) SD 0.23	7.06 (6.75-7.46) SD 0.21	7.27 (6.60-7.46) SD 0.19	P=0.053
Alkaline reserve, mmol/L	16.53 (3.4-31.3) SD 8.45	13.28 (3.40-31.0) SD 8.13	19.43 (4-31.3) SD 7.77	P=0.011
Lactate, mmol/L	9.63 (0.4-23) SD 0.41	10.93 (0.4-23) SD 6.37	8.27 (0.40-23) SD 6.29	P=0.582
Anionic Gap mmol/L	24.65 (3.5-49) SD 10.29	30.20 (13.5-49) SD 8.84	19.11 (3.5-37.7) SD 8.58	P= 0.07
Osmolal gap, mOsm/L	300.0 (242.7-390) SD 25.59	304.8 (272.1-341) SD 18.12	295.17 (242.77-390) SD 30.93	P=0.484
Cr, initial, mg/dL	2.28 (0.54-19.82) SD 2.87	2.16 (0.63-5) SD 1.19	2.39 (0.54-19.82) SD 3.92	P=0.278
Cr, peak 24 hours mg/dL	4.69 (0.5-15.5) SD 4.85	6.42 (0.63-15.50) SD 4.86	2.28 (0.50-10.63) SD 2.59	P=0.935
Ingestion-to-hospital (hours)	13.81 (1-72) SD 18.20	21.9 (2-48) SD 16.86	8.25 (1-72) SD 17.42	P=0.05
Co-ingestion (%)	15 (26.78%)	7 (25%)	8 (28.57%)	P=0.81
Alcohol (%)	12 (21.42%)	5 (17.85%)	7 (25%)	P = 0.79
Toxic alcohol (%)	1 (1.78%)	1 (3.57%)		
Antidote (EtOH)(%)	30 (53.57%)	18 (64.28%)	14 (50%)	P = 0.57
Dialysis (%)	28 (50%)	28 (50%)		
AMS (any) (%)	27 (48.21%)	17 (60.71%)	10 (35.71)	P=0.26
Somnolence (%)	1 (1.78%)		1 (3.57%)	
Coma (%)	19 (33.92%)	12 (42.85%)	7 (25%)	P=0.98
Seizures (%)	1 (1.78%)	1 (3.57%)		
Intubated (%)	21 (37.5%)	15 (53.57%)	6 (21.42%)	P=0.02
Cardiorespiratory arrest (%)	2 (3.57%)	1 (3.57%)	1 (3.57%)	P=0.71
Prolonged renal insufficiency (dialysis > 3 days) (%)	12 (21.42%)	12 (42.85%)		
Death (%)	16 (28.57%)	8 (28.57%)	8 (28.57%)	P=1.0



33% of cases from urban areas



67% of cases from rural areas



42% of patients arrived to hospital by ambulance

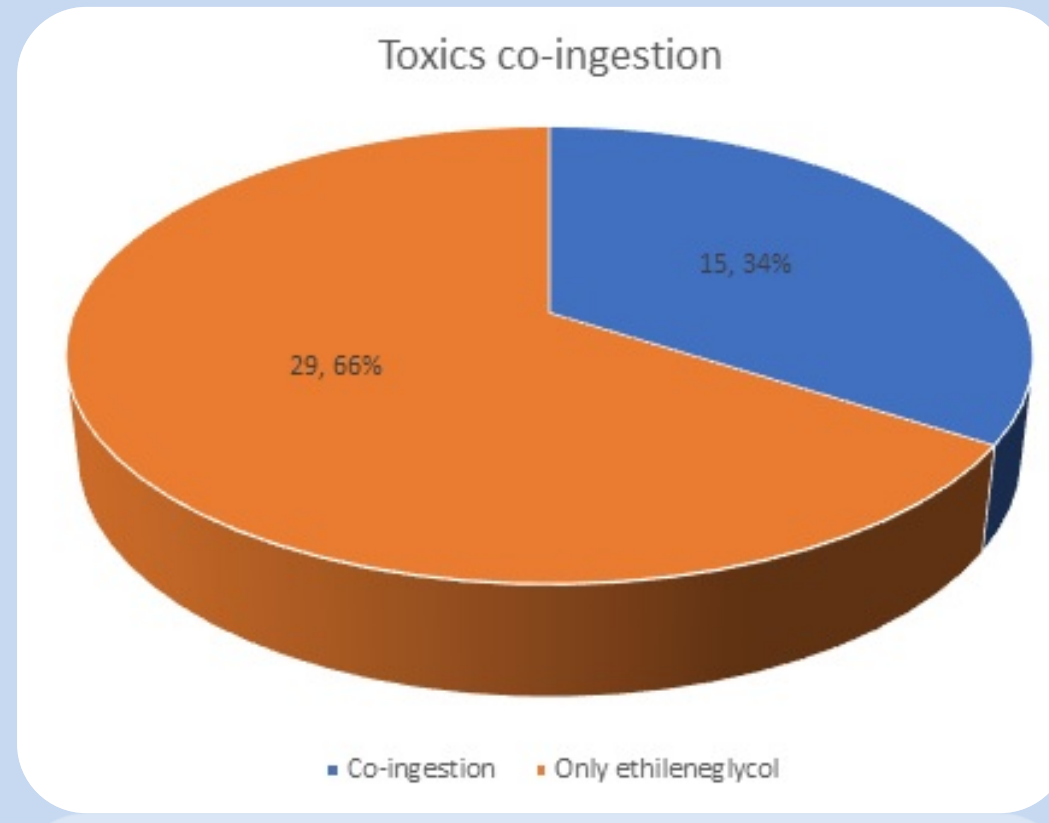
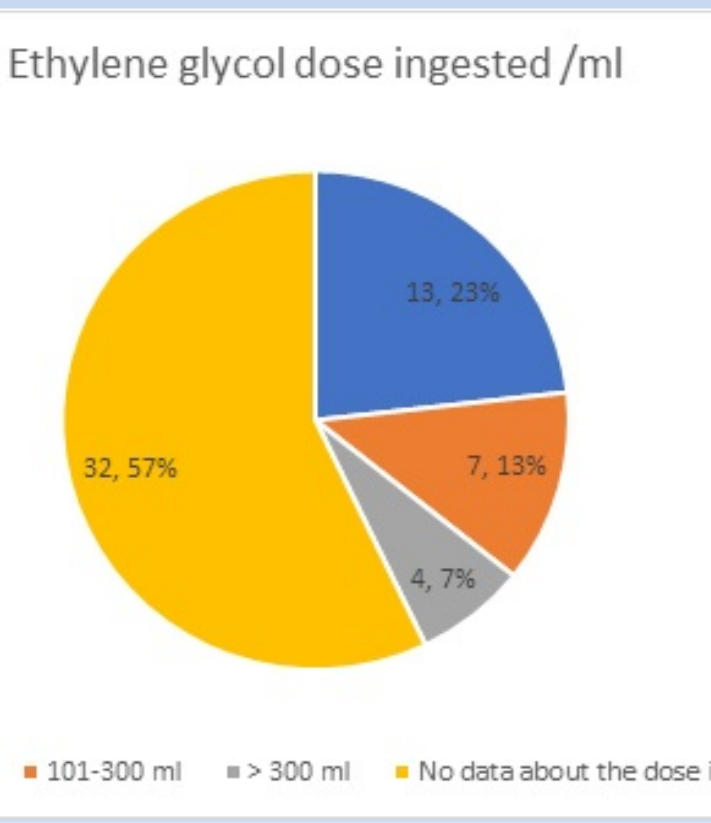


Table 2: Clinical and laboratory characteristics of survivors and deceased patients

Variable	Survivors (mean+/-SD)	Deceased (mean+/-SD)	P value
Age, years	48.53+/-13.29	58.56+/-18.10	0.007
GCS	11.47+/-4.96	7.19+/-5.38	0.007
SBP (mmHg)	131.53+/-29.22	101.80+/-33.90	0.002
DBP (mmHg)	75.38+/-16.05	60.33+/-13.42	0.002
pH	7.19+/-0.22	7.05+/-0.22	0.047
Lactate, mmol/L	9.30+/-7.20	10.38+/-4.23	0.590
Anionic Gap, mmol/L	23.04+/-10.09	28.70+/-10.16	0.062
Osmolal gap, mOsm/L	301.54+/-27.14	296.25+/-21.56	0.490
Alkaline reserve,mmol/L	18.47+/- 8.70	11.62+/-5.41	0.260
Cr, initial, mg/dL	1.98+/-3.08	3.01+/-2.19	0.233
Cr, peak 24 hours mg/dL	4.72+/-5.36	4.61+/-3.56	0.937
Cr NFR, mg/dL	2.45+/-2.53	5.00+/-3.78	0.014
HD	3.10+/-2.31	1.13+/-0.35	0.025



Conclusion & Acknowledgement:

- Ethylene glycol intoxicated patients are critical from the beginning. This life-threatening situation must be early recognized and establish of an emergency treatment.
- Compared to survivors, patients poisoned with ethylene glycol who died or had prolonged RF were more likely to exhibit clinical signs such as coma, seizures and acidosis.
- Earlier time-to-hospital was associated with better outcomes.