Results

- This study was done on 40 neonates in NICU who had the risk factors of sepsis or show sings of sepsis specially fungal infection.
- Specimens was taken from body fluids (33 sample from blood, 5 from urine and 2 from CSF)

Table (1): Distribution of samples:

Sample	*Number*	*%*
Blood	33	82.5
Urine	5	12.5
C.S.F	2	5
Total	40	100

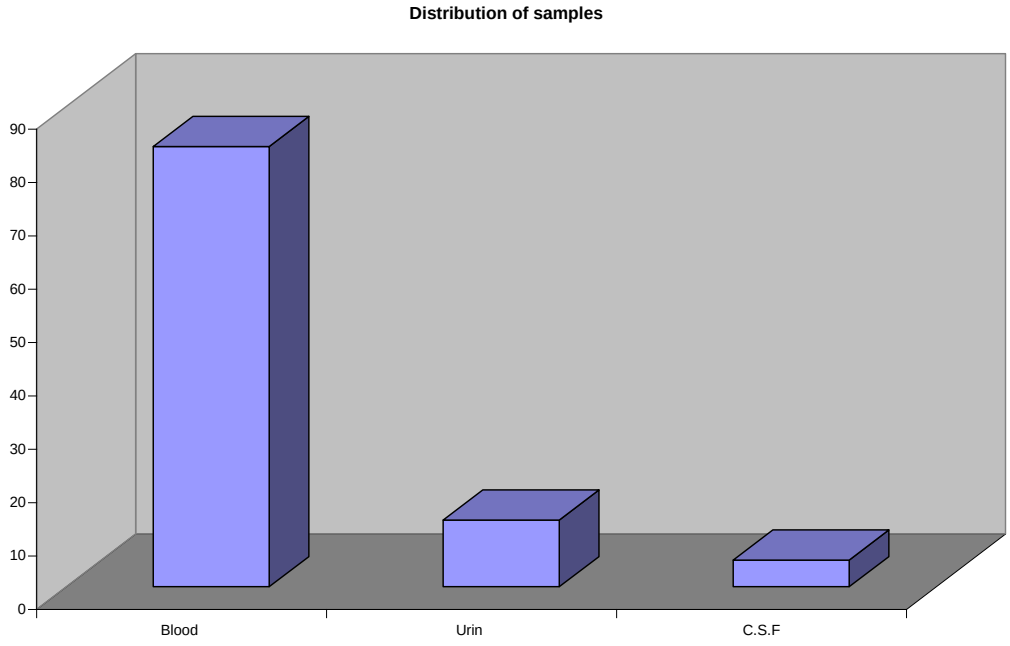

Fig. (1): Distribution of samples

Demoghraphic characteristics of Patients .

The study was done on 40 neonates who ranges between (0-29 days) they were 10 fullterm and 30 preterm.

Table (2): Demoghraphic characteristics of Patients

Character	*Number*	*%*
1- Age		
Fullterm	10	25
Preterm	30	75
2- Sex		
Male	28	70
Female	12	30
3- Weight		
< 1.500 kg	16	40
1.5 : 2.500	18	45
> 2.500	6	15

This table show that 30 (75%) of our patients were preterm and 10 (25%) were full term. 28 (70%) were male and 12 (30%) were female. The majority of patients were in the weight between 1.5 : 2.500 kg (45%) then in the weight < 1.500 kg (40%) after that in the weight > 2.500 (15%)

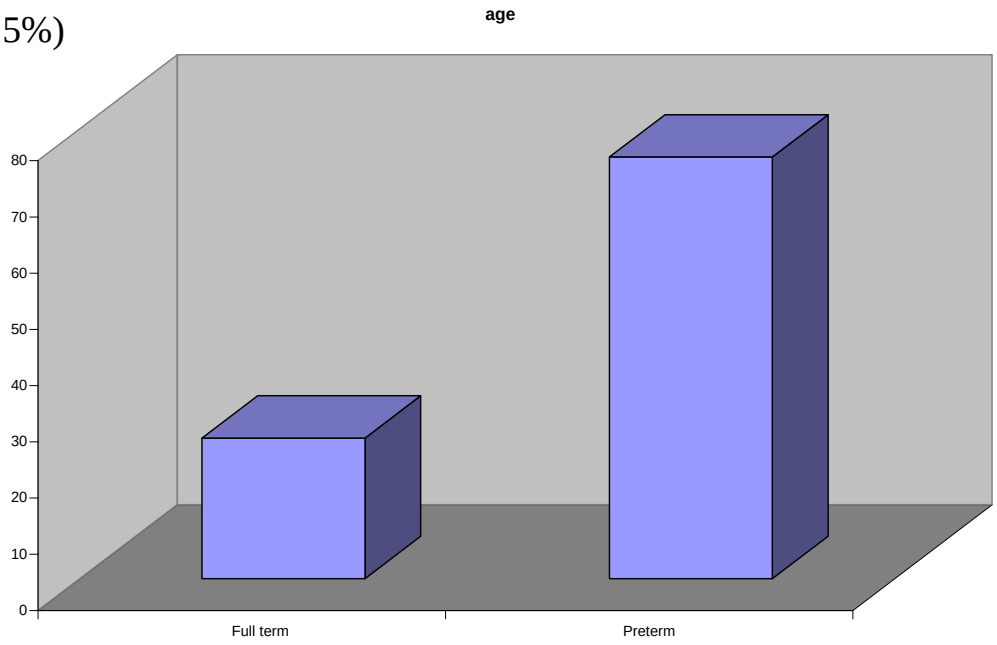

Fig. (2): Gestational age of the patients

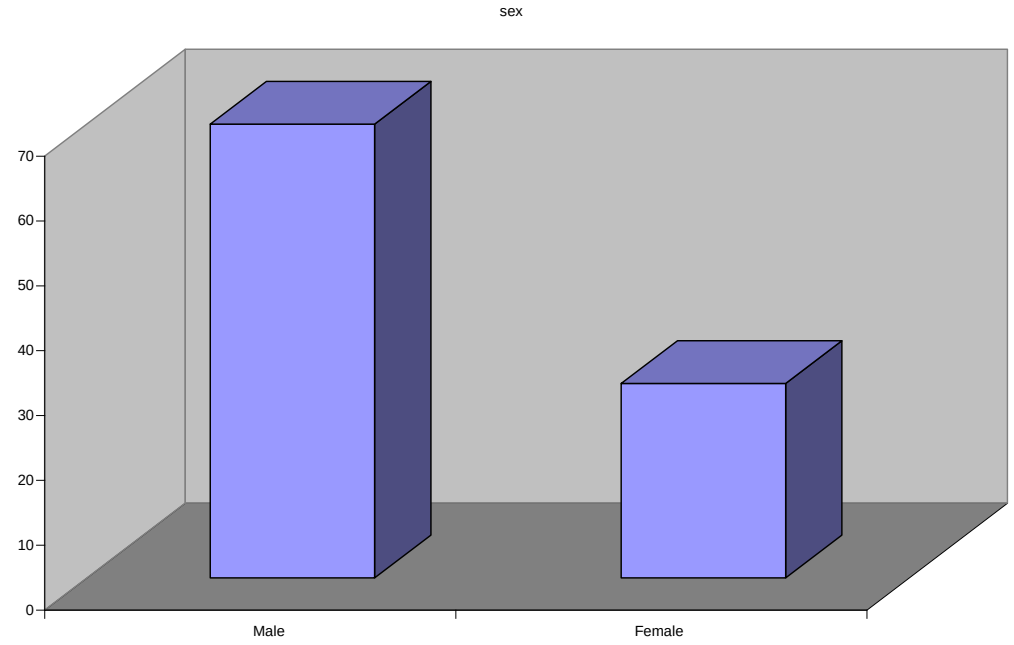

Fig. (3): Sex of the patients

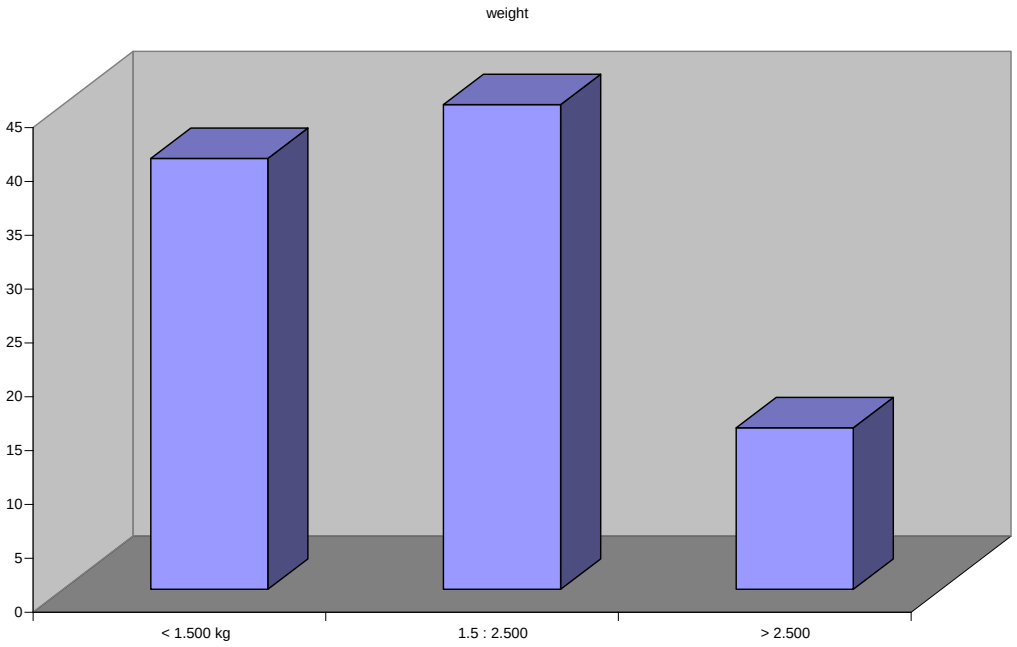

Fig. (4): Weight of the patients

Table (3): Risk Factors and clinical characteristics of the study group:-

	Risk Factor	***Number***	***%***
1	Broad spectrum antibiotic	40	100
2	Respiratory distress syndrome	28	70
3	Abdominal distension	29	72.5
4	Enterocolities	22	55
5	Icterus	10	25
6	Cyanosis	17	42.5
7	Diarrhea	12	30
8	Dehydration	21	52.5
9	Hypothermia	13	32.5
10	Hypoglycemia	5	12.5
11	Irritability	12	30
12	Weak suckling	8	20
13	Fever	22	55
14	Vaginal birth	37	92.5
15	Hypoxia	8	20
16	Central intravascular catheter	4	10
17	Parentral nutrition	30	75
18	Blood drevatives	25	62.5
19	Parentral hydration	35	87.5
20	Mechanical ventilation and endotracheal intubation	17	42.5
21	Steriod therapy	22	55

This table show that (100%) of patients received broad spectrum antibiotics, (92.5%) were vaginaly birth, (87.5%) received parentral hydration, (75%) received parentral nutrition, (72.5%) had abdominal distension, (70%) had respiratory distress syndrome, (62.5%) received blood derivatives, (55%) had fever, (52.5%) had dehydration, (55%) had enterocolities, (55%) had steroid therapy, (42.5%) had mechanical ventilation.

Table (4): Frequency of different candida species by chromogenic candida agar.

	Species	***No***	***%***
1	Candida Albicans	19	47.5
2	Candida parpisilosis	9	22.5
3	Candida Tropicalsis	5	12.5
4	Candida glabrata	4	10
5	Candida Krusi	3	7.5
Total		40	100

This table show that candida albicans were accounted for 47.5% of isolates, while non albicans were (52.5%). The non albicans candida were (22.5%) Candida parpisilosis, (12.5%) C.Tropicalis, (10%) C. glabrata and (7.5%) C krusi.

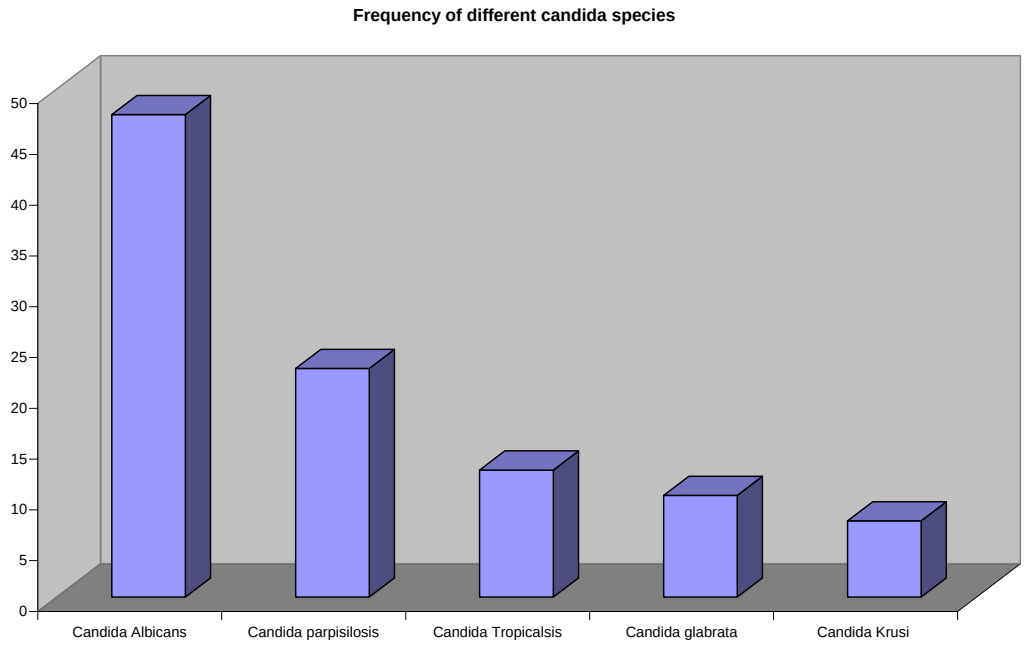

Fig. (5): Frequency of different candida species

Table (5): Results of fluconazole susceptibility by E test for all candida

	Total n. (40)	***Percent %***
S	28	70
SDD	4	10
R	8	20

S: sensitive SDD: small dose dependent R: resistant

This table show that 28 (70%) of all candida isolates were sensitive to fluconazole by E test, 4 (10%) were small dose dependent and 8 (20%) were resistant to fluconazole.

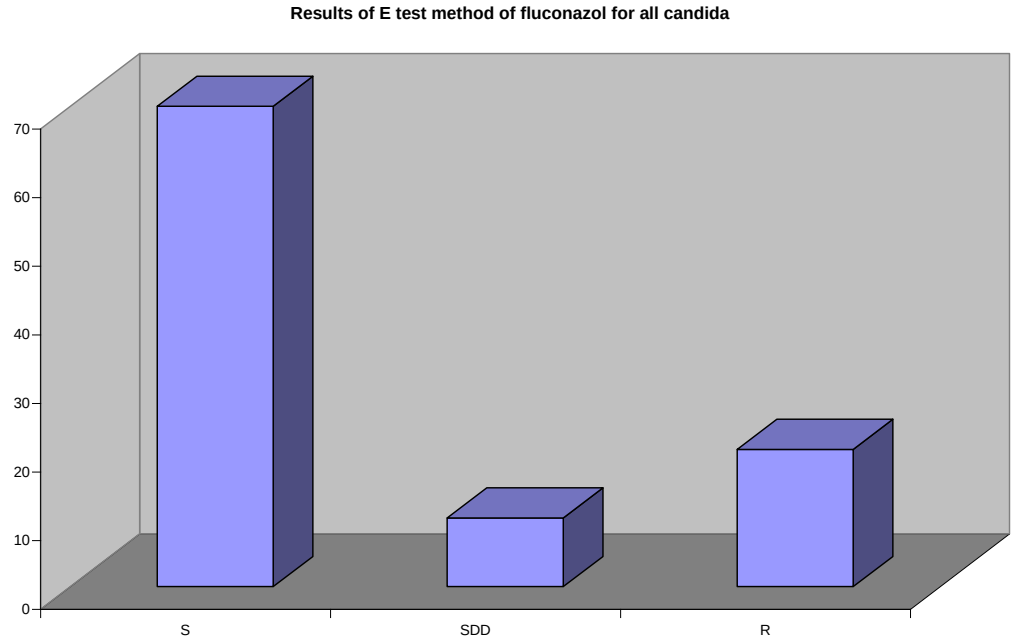

Fig. (6): Results of fluconazole susceptibility by E test for all candida

Table (6): Results of fluconazole susceptibility by E test for candida albicans

	Total n. (17)	***Percent %***
S	15	79
SDD	2	10.5
R	2	10.5

This table show that 15 (79%) from candida albicans isolates were sensitive, 2 (10.5%) were small dose dependent, 2 (10.5%) were resistant to fluconazole by E test method.

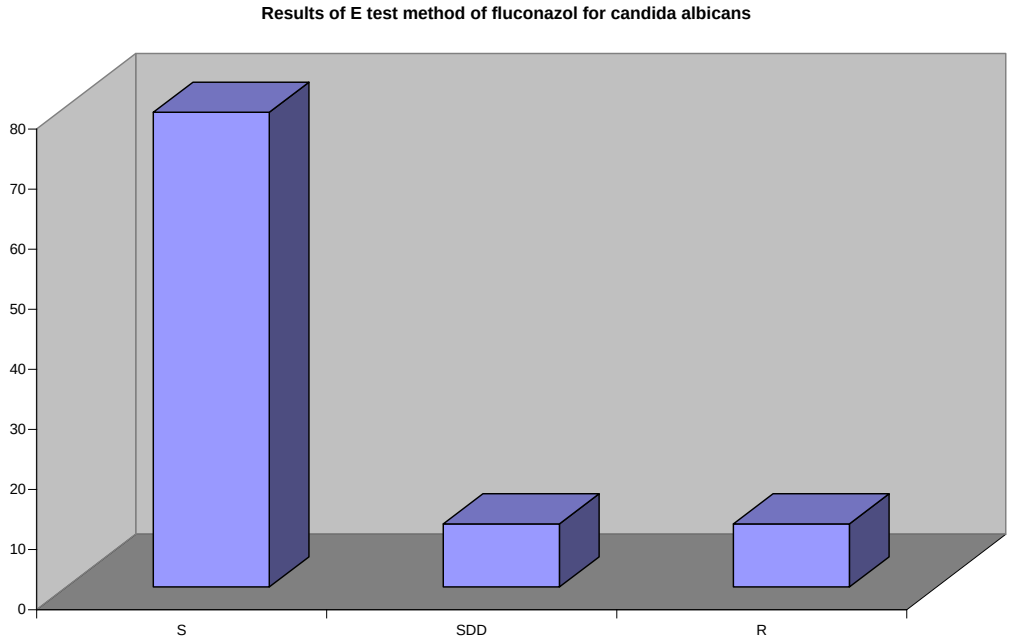

Fig. (7): Results of fluconazole susceptibility by E test for candida albicans

Table (7): Results of fluconazole susceptibility by E test for candida parpisilosis

	Total n. (9)	***Percent %***
S	8	88.89
SDD	0	0
R	1	11.11

This table show that 8 (88.89%) from candida parpisilosis isolates were sensitive, 0 (0%) were small dose dependent, 1 (11.11%) were resistant to fluconazole by E test method.

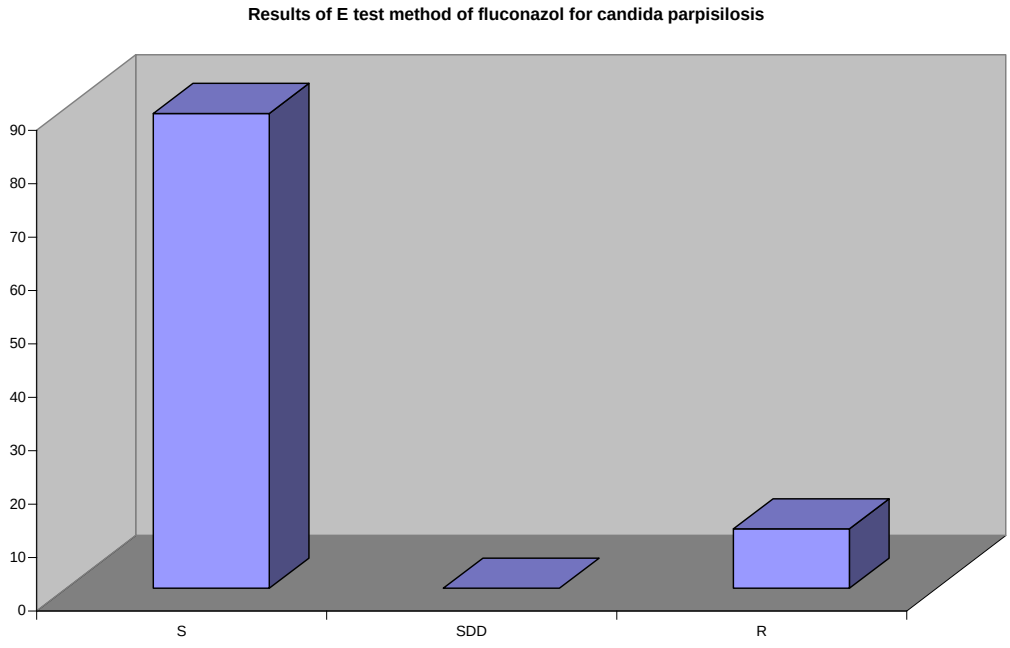

Fig. (8): Results of fluconazole susceptibility by E test for candida parpisilosis

Table (8): Results of fluconazole susceptibility by E test for candida tropicalis

	Total n. (5)	***Percent %***
S	3	60
SDD	0	0
R	2	40

This table show that 3 (60%) from candida tropicalis isolates were sensitive, no isolates were in the small dose dependent, 2 (40%) were resistant to fluconazole by E test method.

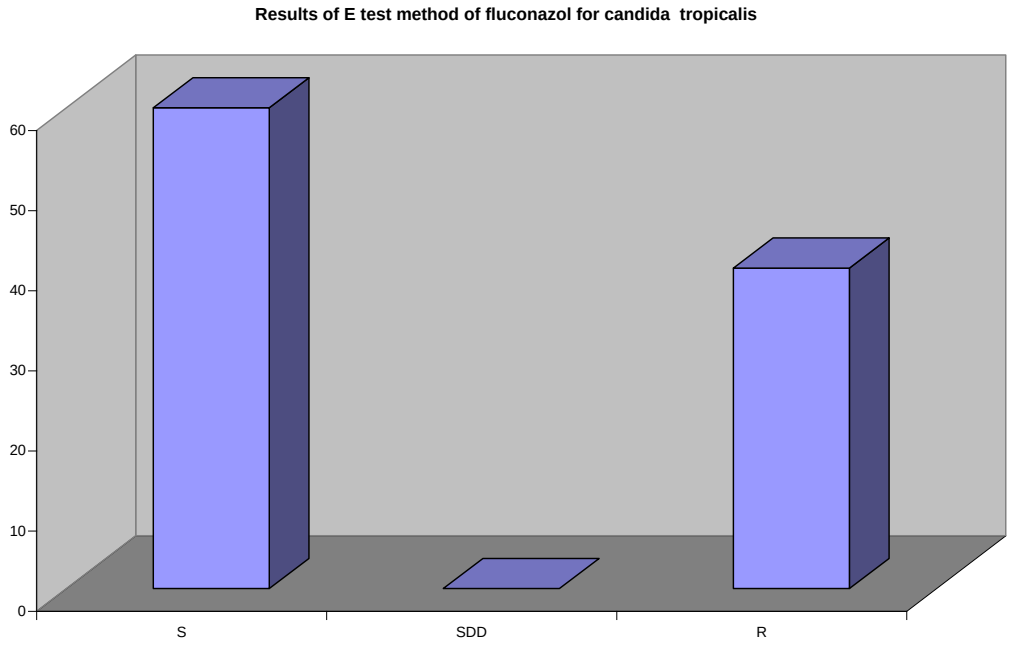

Fig. (9): Results of fluconazole susceptibility by E test for candida tropicalis

Table (9): Results of fluconazole susceptibility by E test for candida glaberata

	Total n. (4)	***Percent %***
S	2	50
SDD	1	25
R	1	25

This table show that 2 (50%) from candida glaberata isolates were sensitive, 1 (25%) were small dose dependent, 1 (25%) were resistant to fluconazole by E test method.

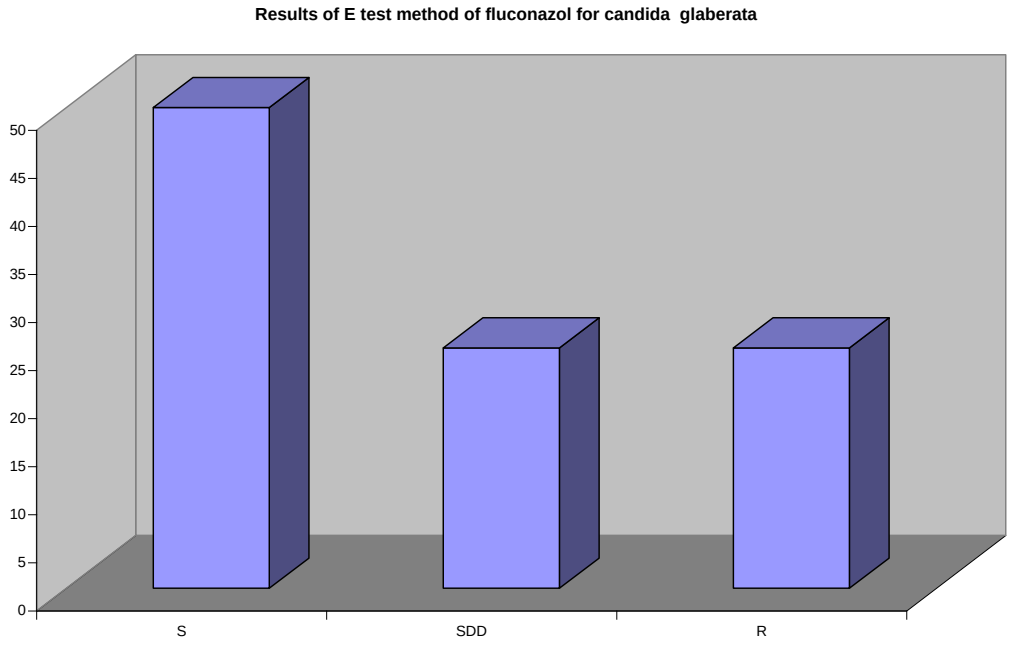

Fig. (10): Results of fluconazole susceptibility by E test for candida glaberata

Table (10): Results of fluconazole susceptibility by E test for candida krusi

	Total n. (3)	***Percent %***
S	0	0
SDD	1	33.3
R	2	66.6

This table show that all C. krusi isolates were non sensitive to fluconazole. There was 1 (33.3%) were SDD and 2 (66.6%) were resistant.

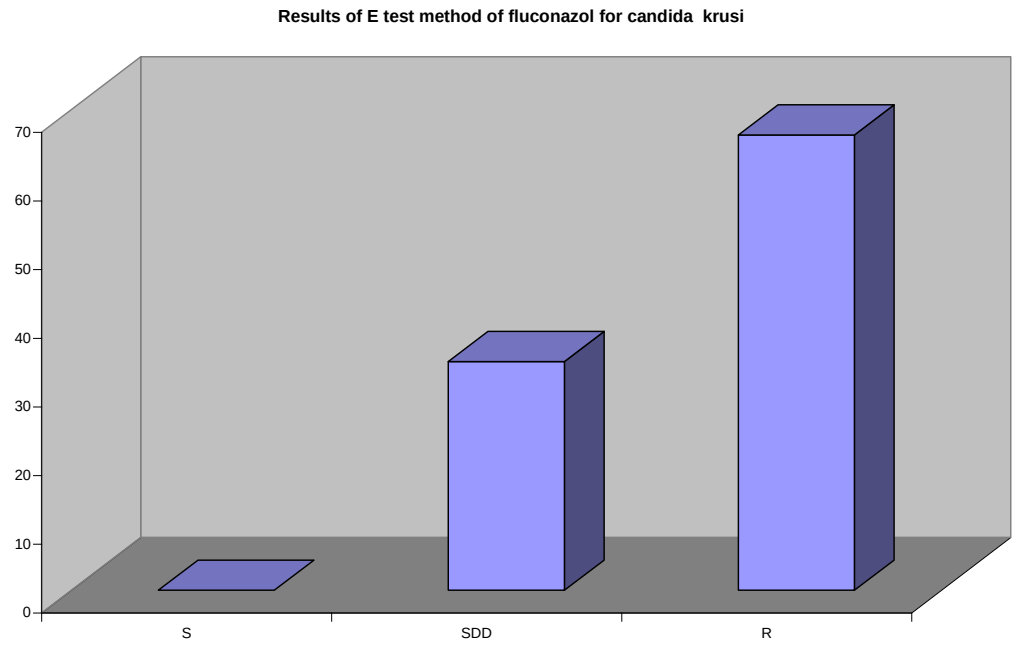

Fig. (11): Results of fluconazole susceptibility by E test for candida krusi

Table (11): Results of disk diffusion of fluconazole e for all candida

	Total n. (40)	***Percent %***
S	26	65
SDD	8	20
R	6	15

This table show that 26 (65%) of candida isolates were sensitive, 8 (20%) were small dose dependent, 6 (15%) were resistant to fluconazole by disk diffusion method .

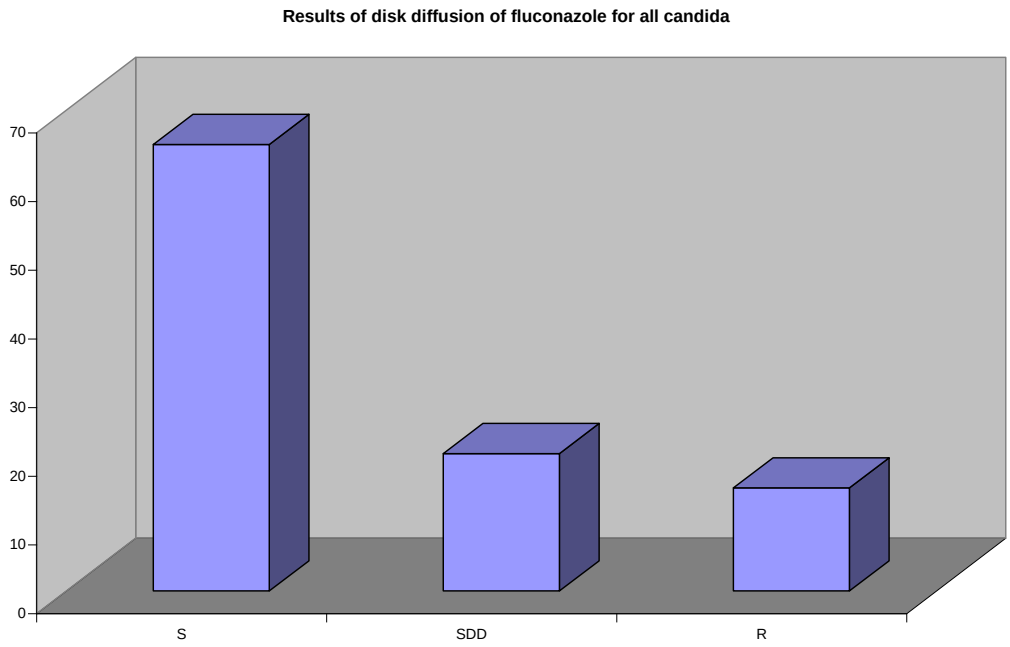

Fig. (12): Results of disk diffusion of fluconazole e for all candida

Table (12): Results of disk diffusion of fluconazole e for candida albicans

	Total n. (19)	***Percent %***
S	14	73.6
SDD	3	15.7
R	2	10.7

This table show that 14 (73.6%) of Candida albicans isolates were sensitive, 3 (15.7%) were small dose dependent, 2 (10.7%) were resistant to fluconazole by disk diffusion.

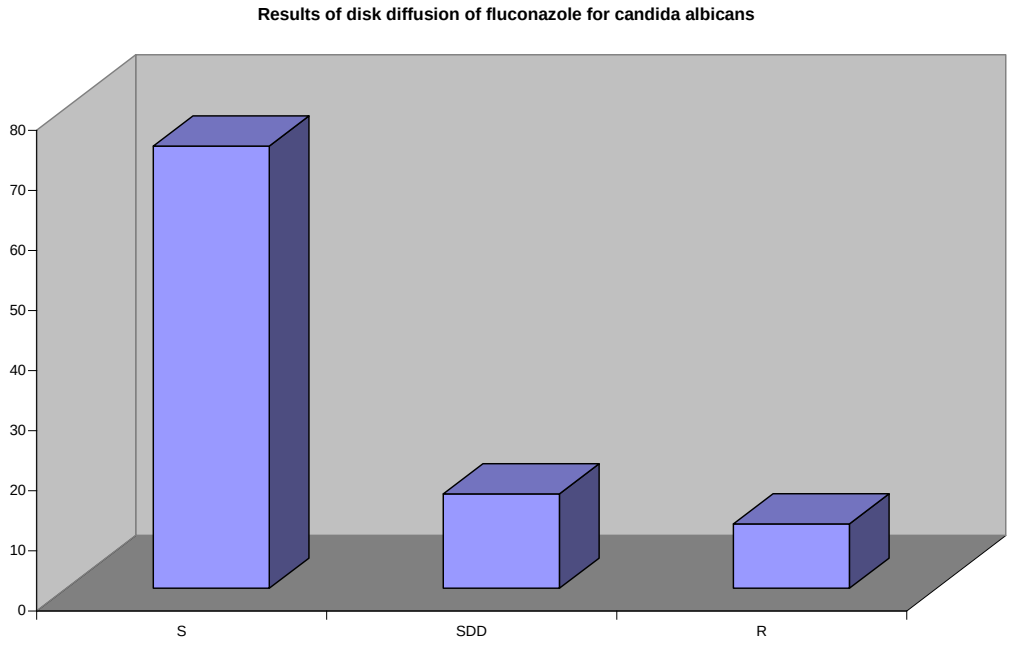

Fig. (13): Results of disk diffusion of fluconazole e for candida albicans

Table (13): Results of disk diffusion of fluconazole e for candida parpisilosis

	Total n. (9)	***Percent %***
S	8	88.8
SDD	0	0
R	1	11.2

This table show that 8 (88.8%) of Candida parpisilosis isolates were sensitive, 0 (0%) were small dose dependent, 1 (11.2%) were resistant to fluconazole by disk diffusion.

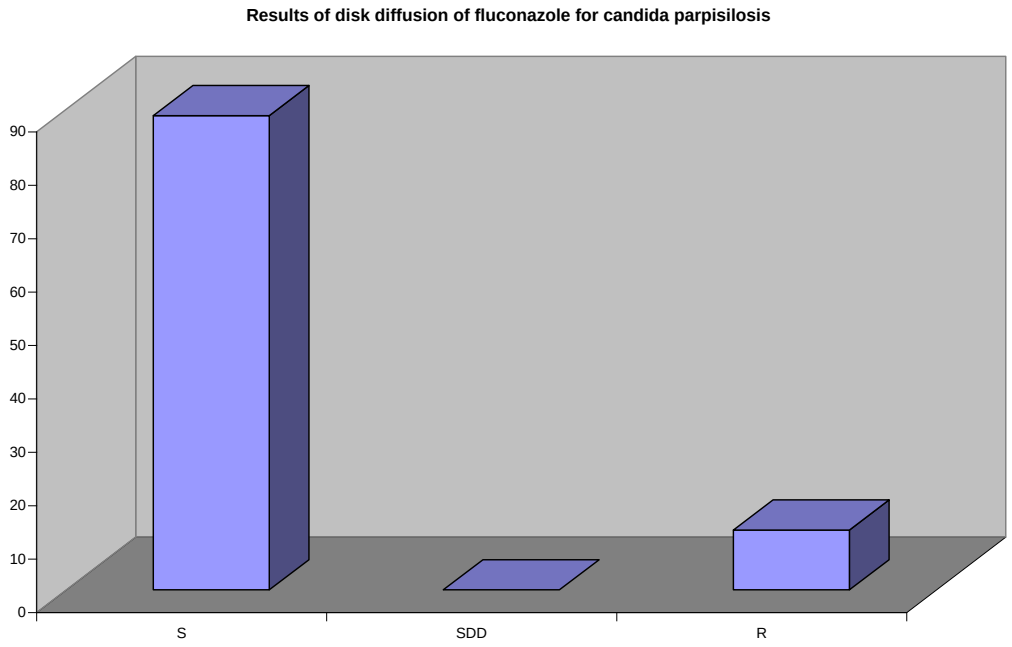

Fig. (14): Results of disk diffusion of fluconazole e for candida parpisilosis

Table (14): Results of disk diffusion of fluconazole e for candida tropicalis

	Total n. (5)	***Percent %***
S	3	60
SDD	1	20
R	1	20

This table show that 3 (60%) of Candida tropicalis isolates were sensitive, 1 (20.5%) were small dose dependent, 1 (20%) were resistant to fluconazole by disk diffusion.

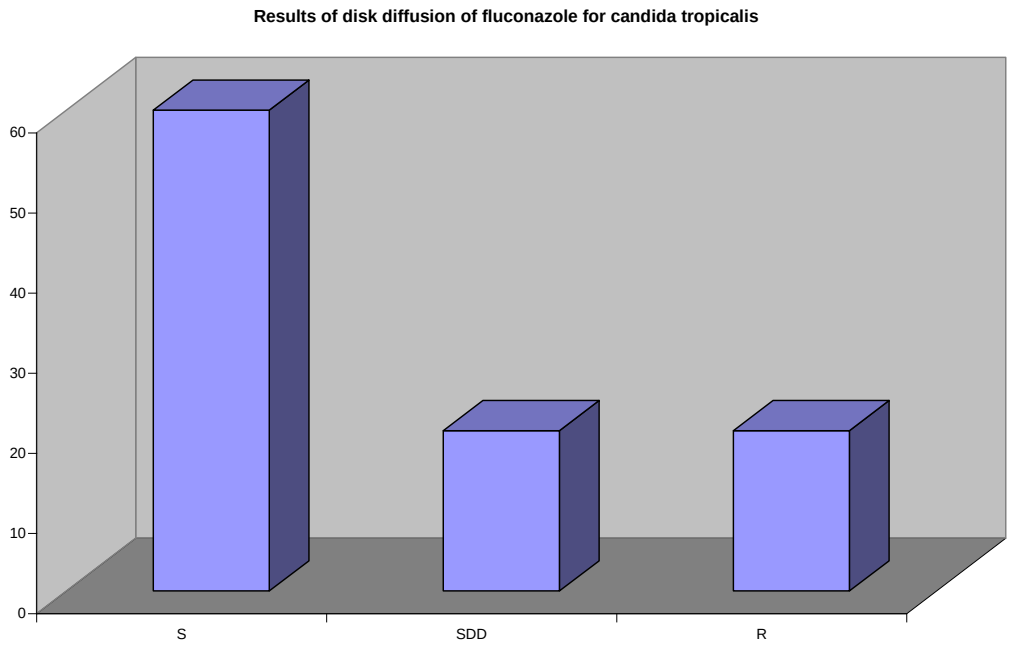

Fig. (15): Results of disk diffusion of fluconazole e for candida tropicalis

Table (15): Results of disk diffusion of fluconazole for candida glaberata

	Total n. (4)	***Percent %***
S	1	25
SDD	2	50
R	1	25

This table show that 1 (25%) of Candida glaberata isolates were sensitive, 2 (50%) were small dose dependent, 1 (25%) were resistant to fluconazole disk diffusion.

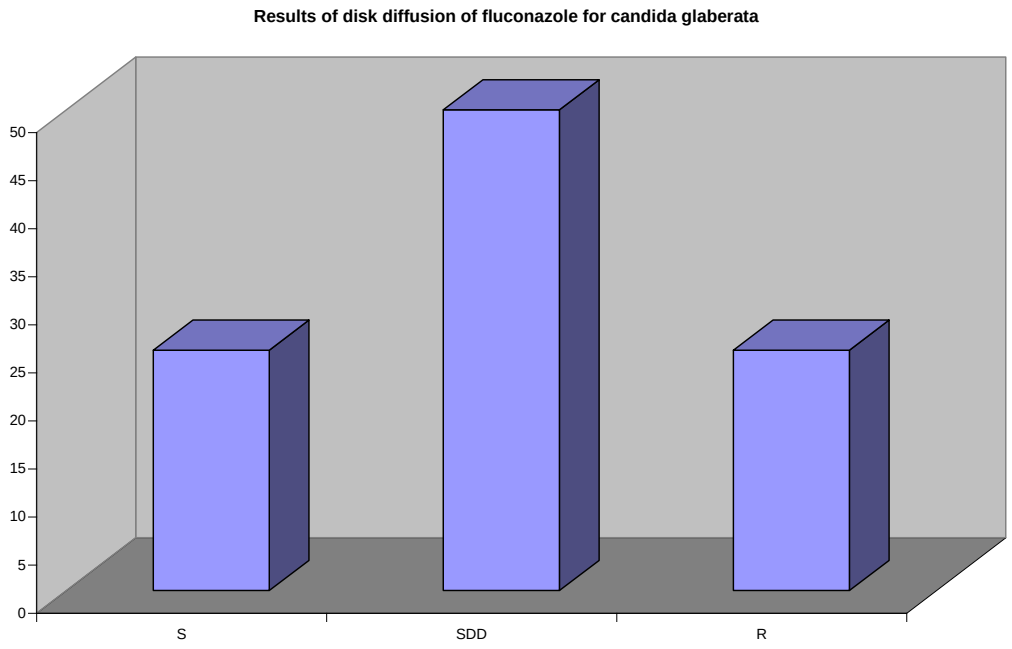

Fig. (16): Results of disk diffusion of fluconazole e for candida glaberata

Table (16): Results of disk diffusion of fluconazole for candida krusi

	Total n. (3)	***Percent %***
S	0	0
SDD	2	66.6
R	1	33.3

This table show that 0 (0%) of candida krusi isolates were sensitive, 2 (66.6%) were small dose dependent, 1 (33.3%) were resistant to fluconazole by disk diffusion.

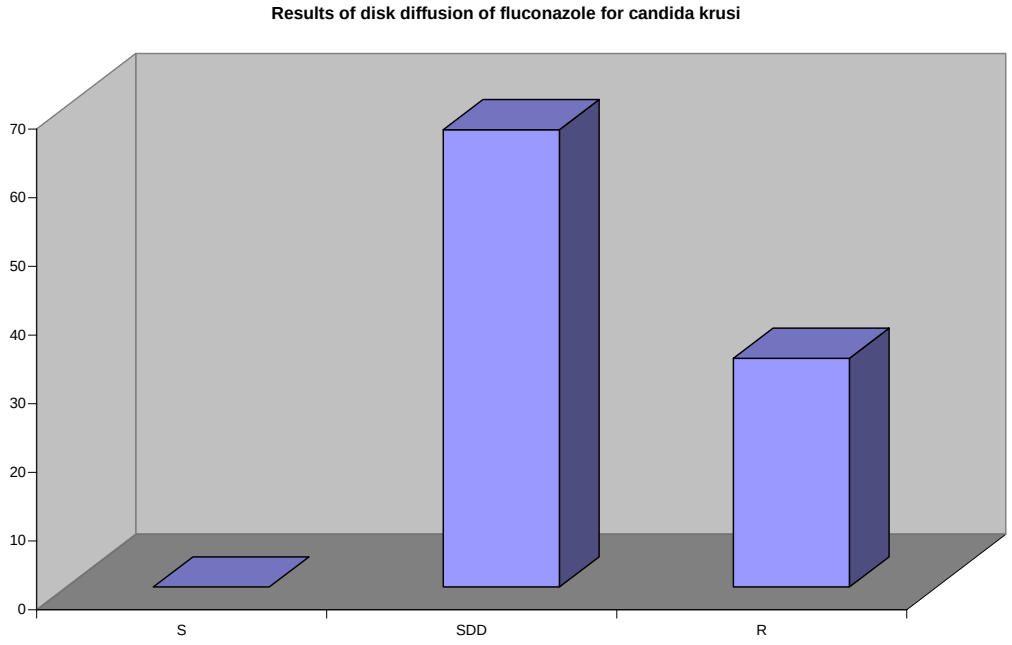

Fig. (17): Results of disk diffusion of fluconazole e for candida krusi

Table (17): Results of fungitest of fluconazole for all candida

Species	S		SDD		R	
	No.	%	No.	%	No.	%
Candida albicans (19)	16	84	1	5.5	2	10.5
Candida parpisilosis (9)	9	100	0	0	0	0
Candida tropicalis (5)	3	60	1	20	1	20
Candida glaberata (4)	1	25	2	50	1	25
Candida krusi (3)	0	0	2	66.5	1	33.5

This table show that (84%) of Candida albicans isolates were spensitive to fluconazole by fungi test, (5.5%) were SDD and (10.5%) were resistant. All C. parpisolosis were sensitive to fluconazole (60%) of C. Topical were sensitive, (20%) were SDD, (20%) were resistant. (25%) of C. galabrata were sensitive, (50%) were SDD (25%) were resistant. None of C. krusi isolates were sensitive (66.5%) were SDD, (33.5%) were resistant.

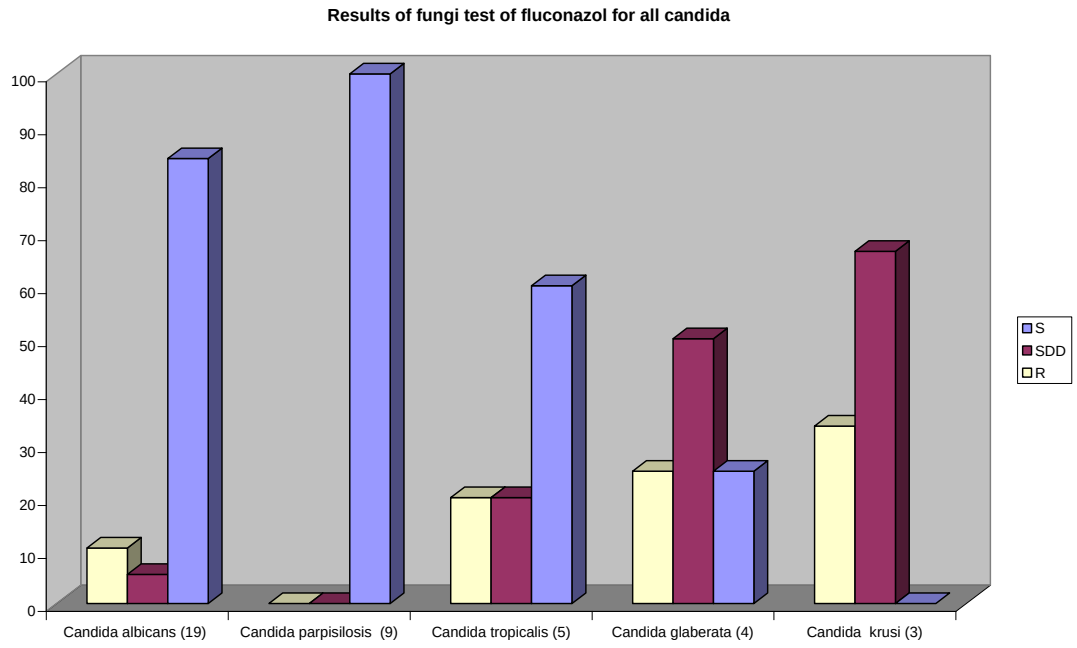

Fig. (18): Results of fungitest of fluconazole for all candida

Table (18): Results of E-test of voriconazol for all candida

Species	S		SDD		R	
	No.	%	No.	%	No.	%
Candida albicans (19)	17	89	1	5.5	1	5.5
Candida parpisilosis (9)	9	100	0	0	0	0
Candida tropicalis (5)	3	60	1	20	1	20
Candida glaberata (4)	3	75	1	25	0	0
Candida krusi (3)	3	100	0	0	0	0

This table show that C. albicans is more sensitive to voriconazol than to fluconazole , there is no resistance from C. parpisilosis to voriconazol, the resistance of C. tropicalis to voriconazole is lowere than fluconazole , C. glabrata is more sensitive to voriconazol than fluconazole and less resistant to it, there is no resistance from C. krusi to voriconazol. That all of them are sensitive to it. So voriconazole is a good drug for the resistant species.

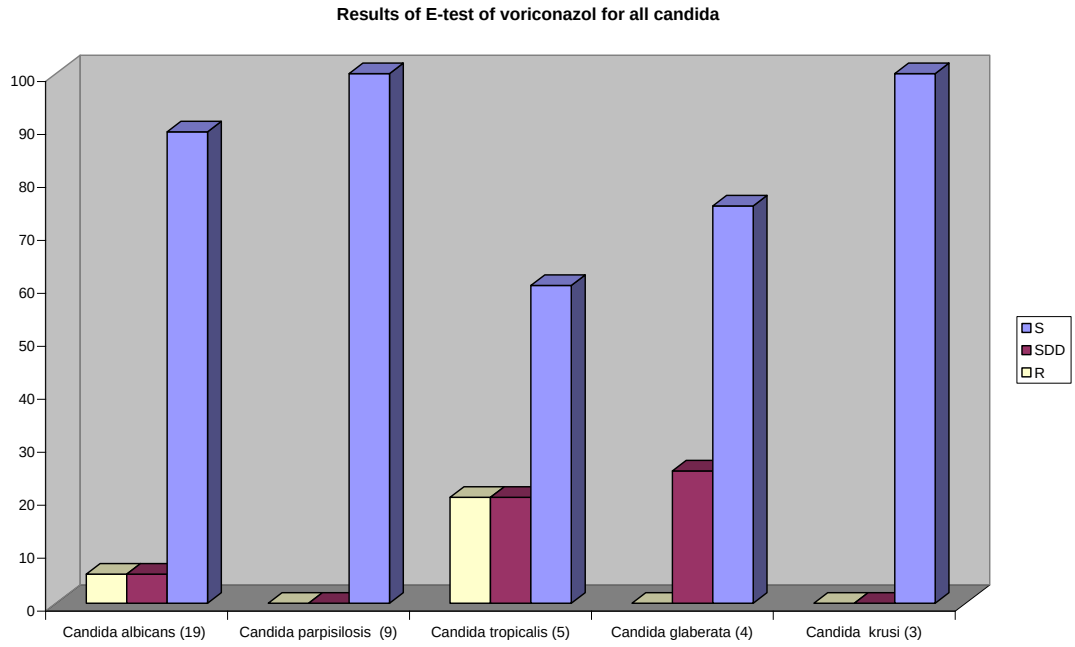

Fig. (19): Results of E-test of voriconazol for all candida

Table (19): Comparison between the results of fungitest and disk diffusion test versus E test for fluconazole

Methods	λ^2	***p. value***	***Statistical significant***
Results of fungitest versus E test to fluconazole	0.5	> 0.05	NS
Results of disk diffusion test versus E test to fluconazole	0.3	> 0.05	NS

No statistical significant difference between different methods of susceptibility for determine the susceptibility of candida isolates to fluconazole.