

HELLENIC SOCIETY OF NEPHROLOGY MEETING & SEMINAR

Combined with:

18th BANTAO CONGRESS

October 19-22, 2023

Makedonia Palace Hotel THESSALONIKI, GREECE



Sodium bicarbonate catheter lock solution is not inferior to citrate solution in patients dialyzed through Central Venous Catheter (CVC)

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Introduction:

- **Sodium bicarbonate lock solution (SBCLS)** is a promising agent with antimicrobial and antithrombotic abilities
- **Citrate (CCLS)** is another recommended solution

Objective:

- Compare **SBCLS 8.4%** to **CCLS 30%** in preventing catheter loss due to catheter –related thromboses (CRT) and catheter-related bloodstream infections (CRBSI)

Material & Method

Prospective trial
24 stable chronic HD patients
6 months

Group A:
Sodium bicarbonate lock solution
(SBCLS) 8.4%
N = 14

Group B:
Citrate lock solution
(CCLS) 30%
N = 10

Group A:
Citrate lock solution
(CCLS) 30%
N = 14

Group B:
Sodium bicarbonate lock solution
(SBCLS) 8.4%
N = 10

3 months



3 months



- **Blood pump, arterial and venous pressure, URR, KT/V and blood tests were recorded**
- **Catheter-related thromboses (CRT) and catheter-related bloodstream infections** were evaluated over 6 months
- **Rescue therapy for catheter thrombosis/infection was administered as needed**

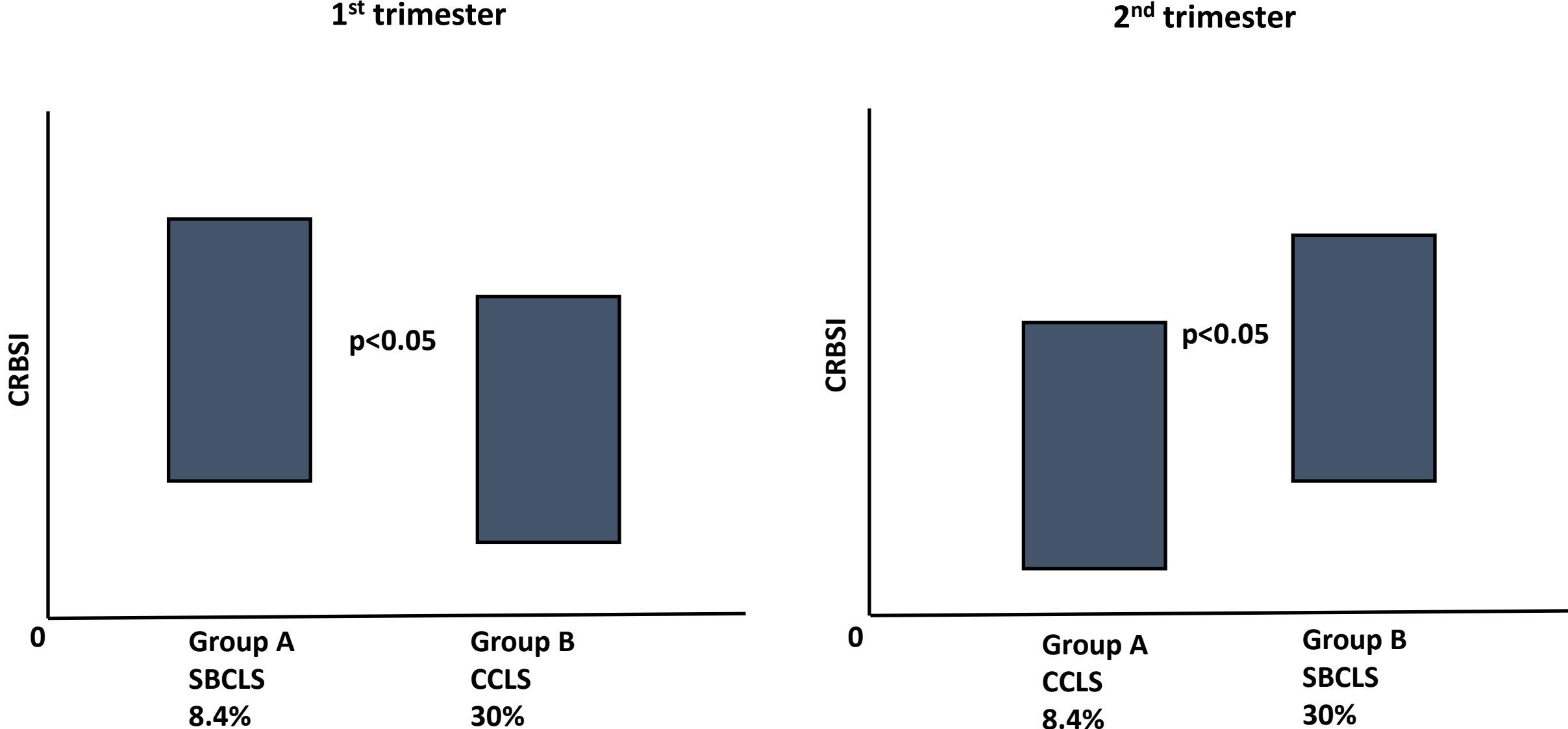
Results

Table 1. Demographic, anthropometric and clinical characteristics of 24 patients on haemodialysis through central venous catheter and differences between the two groups at start

Parameters	All patients (n = 24)	Group A SBCLS (n = 14)	Group B CCLS (n = 10)	t - test p
Age (years)	74 ± 11	78.2 ± 7.5	73.5 ± 8.1	0.16
Sex (male/female)	14/10 (58/42%)	9/5	5/5	0.853
Duration of HD (months)	45.9 (1-102)	50.2 ± 33.5	71.3 ± 19.5	0.53
Duration of CVC (months)	15.9 ± 15.4	18.1 ± 15.9	18.8 ± 11.8	0.93
MBP (mmHg)	103.33 (81.6-120)	101.7 (86.7-115)	101.6 (81.7-120)	0.467
Qb	294 ± 37.3	275 ± 36.2	300 ± 23.2	0.11
AP	-119.7 ± 72.3	-126.4 ± 36.5	-115 ± 17.6	0.49
VP	127 ± 44	123.3 ± 47	140 ± 41.4	0.29
Ht (%)	33 ± 6.2	34.1 ± 2.9	35.3 ± 1.6	0.14
PLT (/μL)	180.400 ± 92.000	163.000 ± 60.400	179.000 ± 33.500	0.22
INR	1.14 ± 0.2	1.06 ± 0.06	1.29 ± 0.5	0.23
Urea (mg/dl)	119.5 ± 33.2	127.3 ± 32.4	107.8 ± 32.9	0.16
URR (%)	73.4 ± 11.6	74.4 ± 15	70.6 ± 11.1	0.63
KT/V	1.6 ± 0.4	1.69 ± 0.5	1.47 ± 0.4	0.45

Catheter-related bloodstream infection (CRBSI)

- **8 CRBSIs** were recorded during the 1st trimester and **17** during the 2nd



Catheter-related thrombosis (CRT)

- **9 CRTs** were recorded during the 1st trimester and **7** during the 2nd
- CRTs did not differ between SBCLS 8.4% and CCLS 30% groups
- No catheter loss was recorded during study period

Conclusions:

- **Observed increased incidence of bloodstream infections during summer - the 2nd trimester- cannot be conclusive due to small number of patients**
- **Sodium bicarbonate catheter lock solution is comparable to citrate solution in preventing HD catheter loss**
- **It is safe, inexpensive, readily available and potent to decrease dialysis-related costs**

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Thank you for your attention!