

Prospective Randomized Comparative Study of Negative Pressure Wound Therapy (NPWT) With Negative Pressure Wound Therapy with Saline Instillation (NPWTi) In Diabetic Foot

Dr.G.Saravanakumar M.S., D.A¹, Dr. M. Joyner Abraham M.S²

¹(Assistant Profesor, Department of General Surgery, Madurai Medical College)

²(Post Graduate, Department of General Surgery, Madurai Medical College)

Corresponding Author: Dr.G.Saravanakumar M.S., D.A

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I. Aim:

To compare the use of negative pressure wound therapy(NPWT) with negative pressure wound therapy with saline instillation(NPWTi) in cases of diabetic foot ulcers in terms of

- Thickness of granulation achieved after 10 days of therapy
- Time taken for the wound to heal and become fit for either surgery [SSG or secondary suturing.
- Reduction in wound area after 7 days of therapy
- Length of hospital stay
- Number of OR visits
- Cost effectiveness.

II. Method:

Study setting – Department of General Surgery, Government Rajaji Hospital, Madurai Medical College.

Study period - MAY 2017 to APRIL 2018

Study population – All patients admitted in Department of General Surgery, Government Rajaji Hospital, Madurai Medical Collegewith **diabetic foot ulcers**.

SAMPLE SIZE:

Sample size was calculated using “epi info” software to detect a mean difference of 1.3 in time taken to revert back and standard deviations as 1.7 and 1.36 respectively in each procedure. It came to 32 in each group which was rounded of to 30.

Confidence interval was taken as 95% and power as 80%

So 30 patients were recruited in each of the surgical procedure

OUTCOME:

- ▶ Efficacy between the procedures were determined based on following criteria:
 - Thickness of granulation achieved after 7 days of therapy
 - Time taken for the wound to heal and become fit for surgery
 - Reduction in wound area
 - Length of hospital stay
 - Number of OR visits
 - Cost effectiveness

III. Statistical Analysis:

- ▶ Data will be entered into Microsoft Excel (Windows 10; Version 2016)
- ▶ Analyses will be done using the Statistical Package for Social Sciences (SPSS) for Windows software (trial version 22.0; SPSS Inc, Chicago)
- ▶ Descriptive statistics such as mean and standard deviation (SD) for continuous variables, frequencies and percentages will be calculated for categorical variable
- ▶ Comparison between groups will be analysed using Independent t test

IV. Results:

- ▶ A total of 60 patients were included in the study with 30 in each surgical procedure.
- ▶ The age of the study population ranged between 41 – 70 with a mean of 61.28 and standard deviation of 7.048.

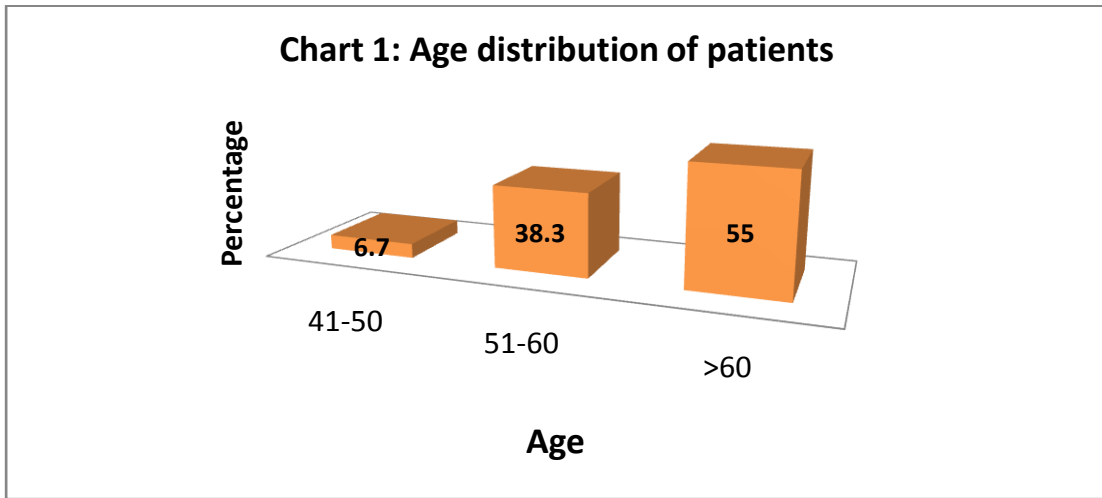
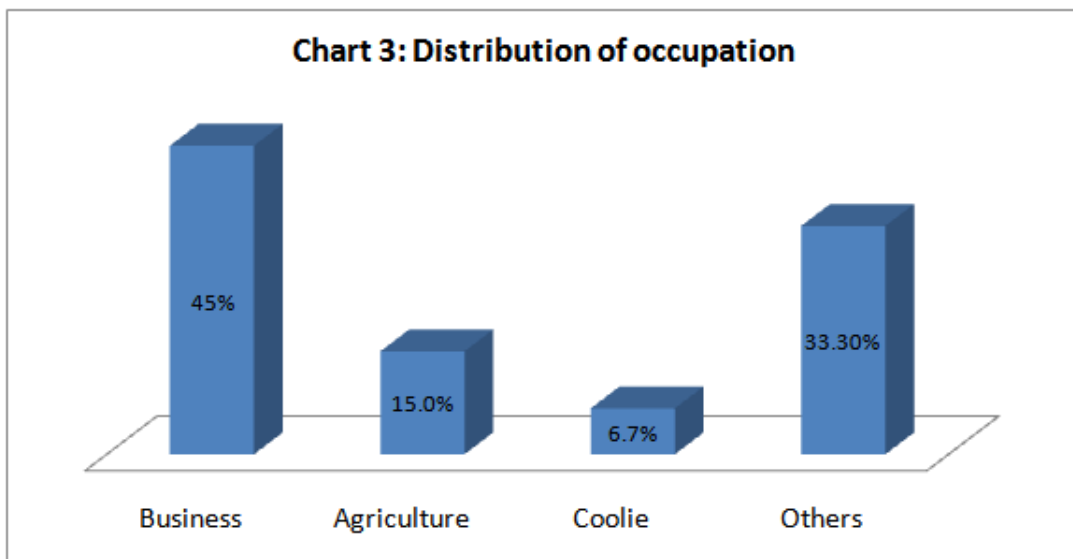
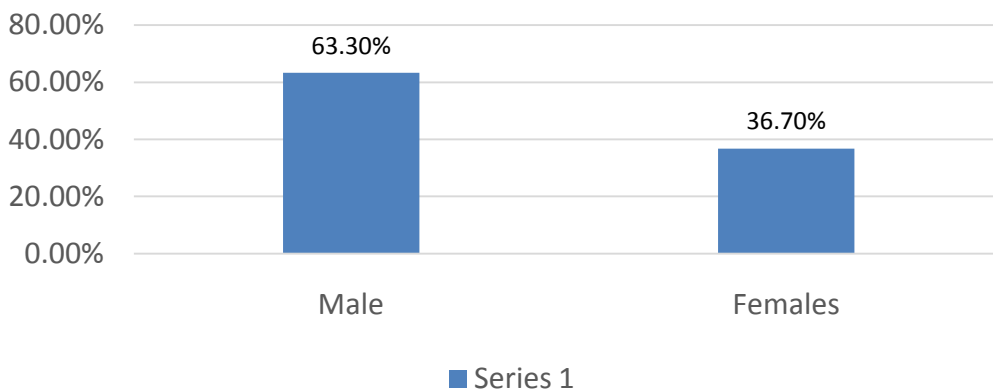
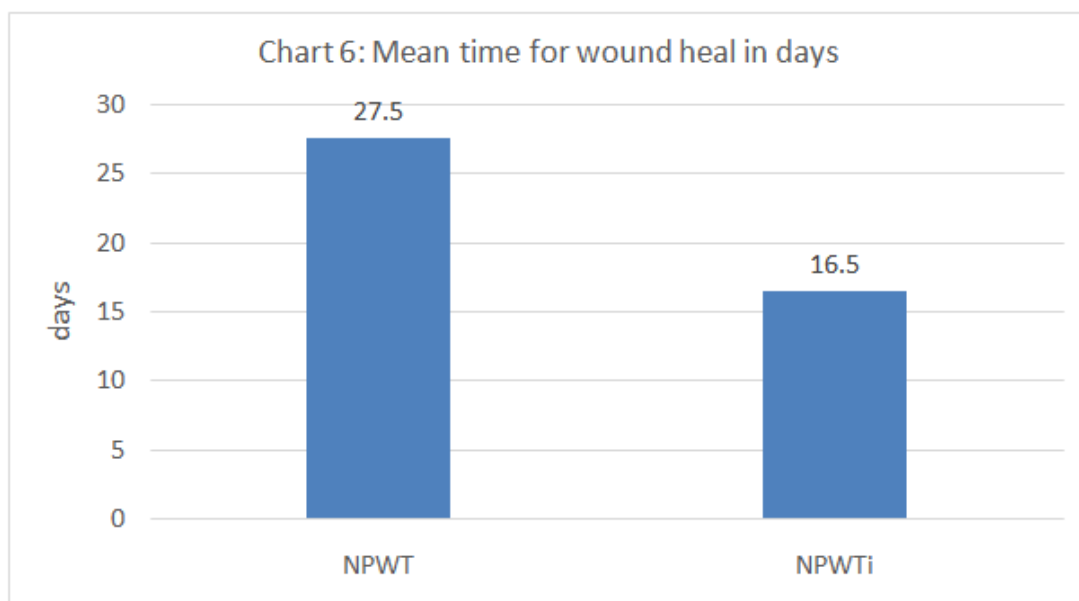
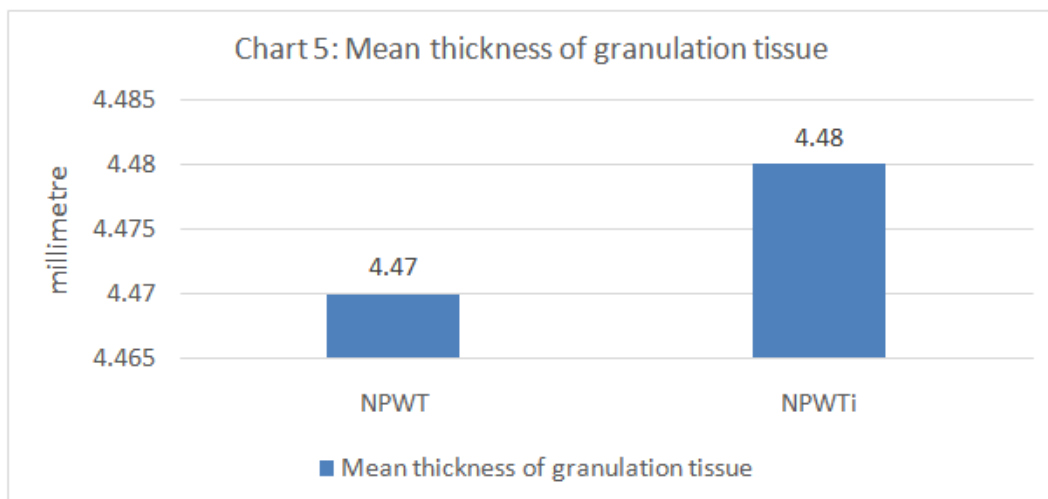
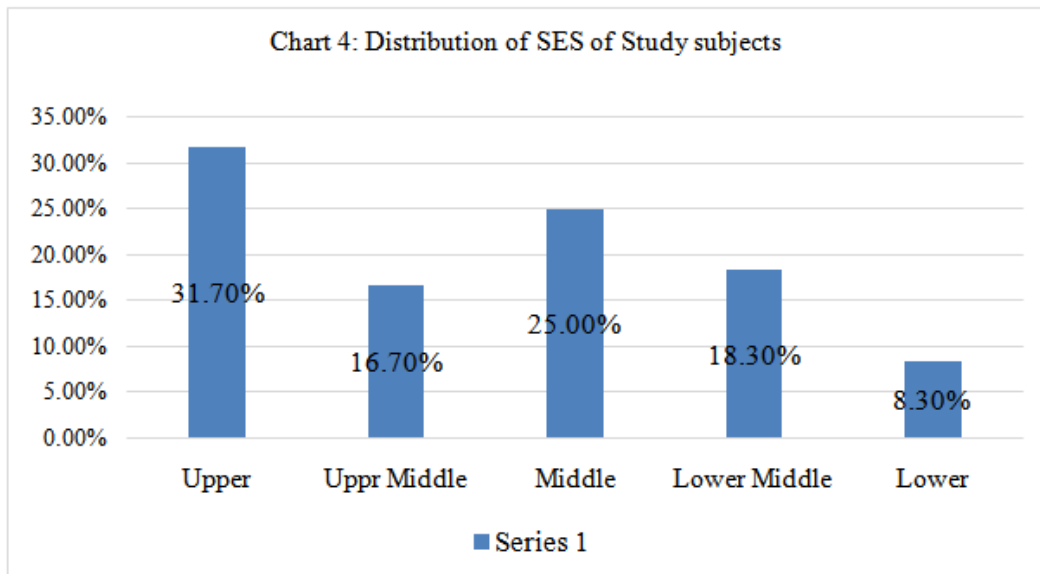
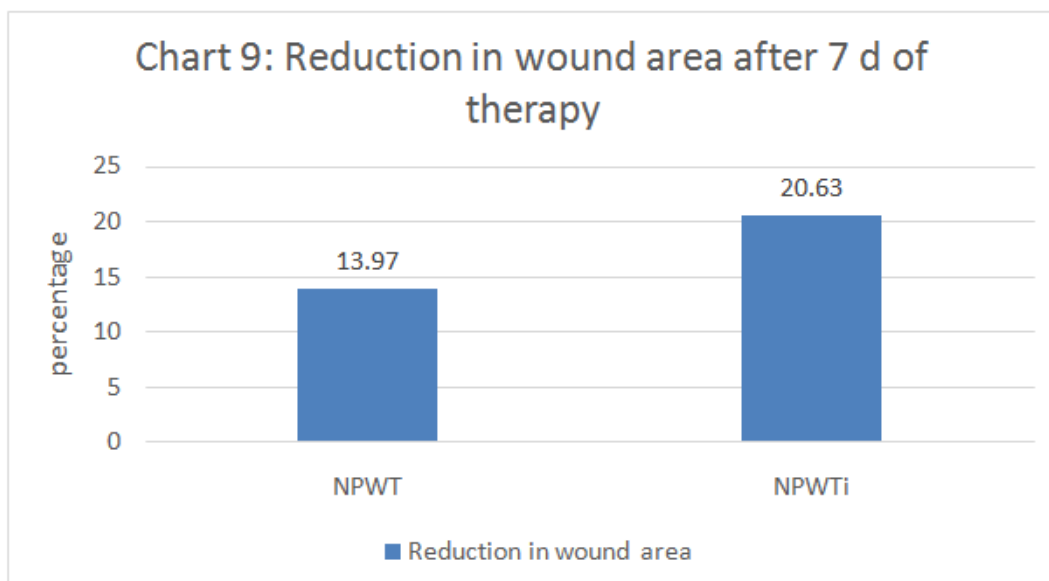
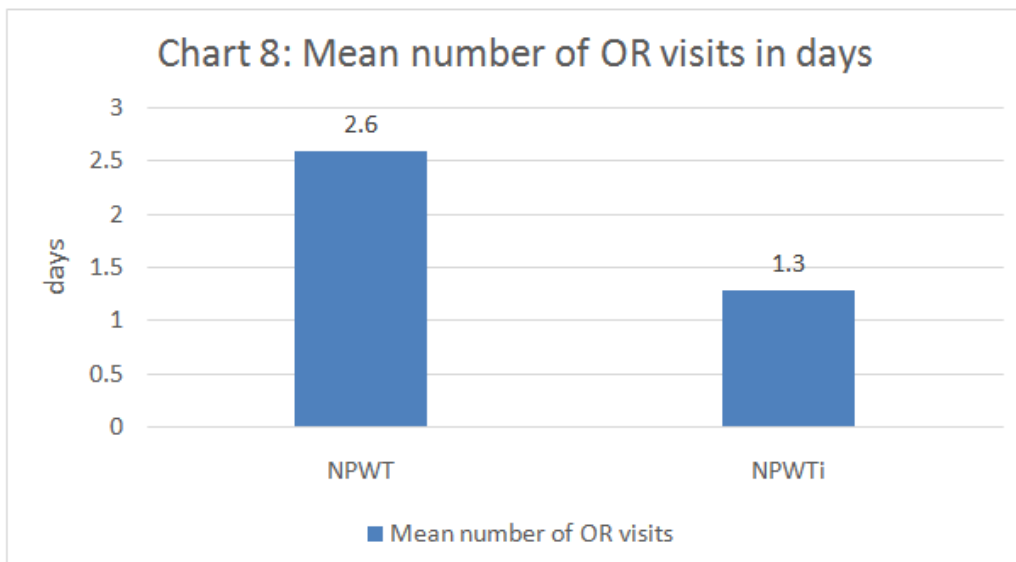
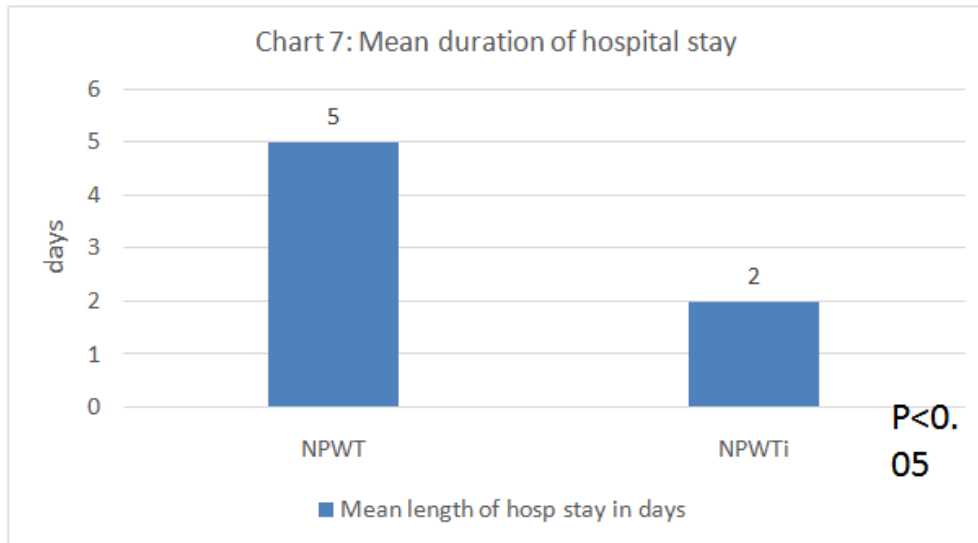
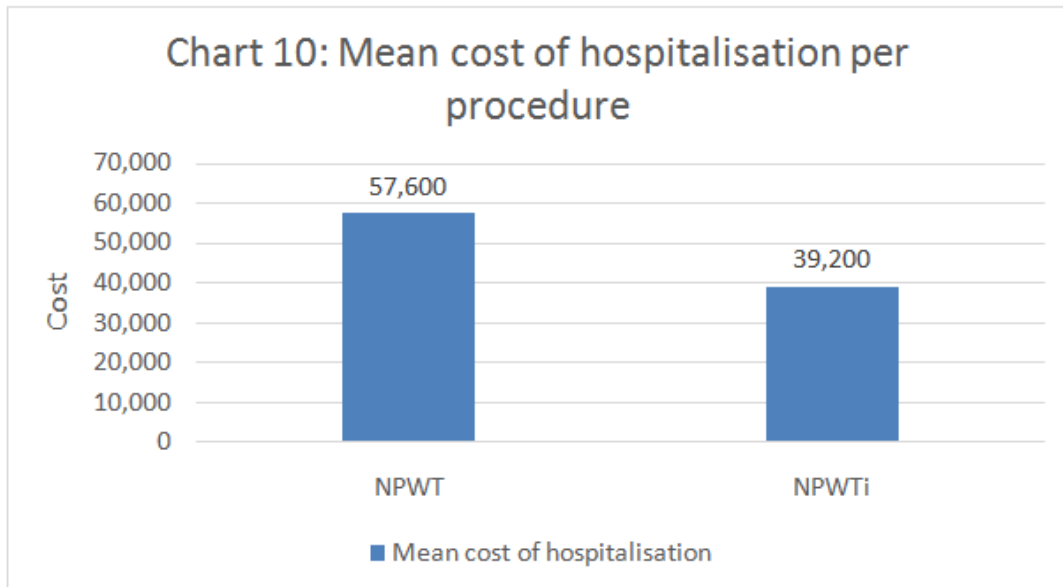


Chart 2: Distribution of study subjects by gender









outcome	NPWT	NPWTi	t	df	Sig. (2-tailed)
Thickness of GranTiss (mm) (mean)	4.47 ± 1.27	4.48 ± 1.58	-.051	58.000	.960
Reduction in Wound Area (%) (mean)	13.97 ±6.08	20.63 ±5.17	-4.574	56.530	.000
Length of HospStay (days) (mean)	5.1 ±0.85	1.97 ±0.72	15.475	56.539	.000
Time for Wound Healing (days) (mean)	27.5 ±2.24	16.47 ±1.93	20.461	56.718	.000
OR Visits (number) (mean)	2.63 ±0.57	1.30 ±0.54	9.464	57.914	.000
Cost (rs) (mean)	57600 ± 14074	39200 ±8209	6.178	46.687	.000

Table: Comparison of outcome between NPWT and NPWTi

Dr.G.Saravanakumar M.S. "Prospective Randomized Comparative Study of Negative Pressure Wound Therapy (NPWT) With Negative Pressure Wound Therapy with Saline Instillation (NPWTi) In Diabetic Foot." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS), vol. 17, no. 12, 2018, pp 23-27.