RESEARCH PAPER

Evaluation Of Knowledge On Negative Pressure Wound Therapy Among Interns In A Teritiary Care Centre

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ABSTRACT

Negative pressure wound therapy is an effective technique in management of complex , chronic wounds, Assesing the wound complexity is initially done by interns as a first clinician in teaching institute . The main aim of this study is to assess knowledge on negative pressure wound therapy or vaccum assisted dressing among interns.

OBJECTIVE: Main objective of this study id to improve knowledge about negative preesure wound therapy among interns completing rotational posting in department of general surgery in karpaga vinayaga institute of medical science and research centre

PRIMARY OBJECTIVE: To assess the knowledge among interns about role of negative pressure wound therapy among interns in chronic and complex wounds .

SECONDARY OBJECTIVE: To improve knowledge on the initiation, management of negative pressure wound therapy (NPWT)in chronic, complex wound .

METHOD: A cross sectional study conducted among interns between period of may 2025 ends on may 2026 in department of general surgery in karpaga vinayaga institute of medical sciences and research centre

Keywords: Negative pressure wound therapy, NPWT, Vacuum assisted dressing, Interns, Wound management.

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INTRODUCTION

wound healing is a complex process involves various process and techinques involves in control of infection - proceeding with wound debridement which means removal of non viable tissues from the wound , Initiation of intravenous antibiotics to reduce bacterial load in the affected wound . Main improving patient immunity and control of any systemic disease associated with delayed wound healing e.g. - uncontrolled diabetes mellitus. Uncontrolled Diabetes mellitus is one of the major disease causing decreased immunity , reduces tissue perfusion and causes nerve damage results in the formation of chronic and complex wounds .

Chronic wounds promotes a major challenge for even expert clinician in maintaining and provide appropriate cure , Providing disease free time for the patient . Newer techniques like negative pressure wound therapy promotes healing and provides a promising result for the patient .

Negative wound therapy or vacuum assisted dressing have been a vital and recent advances in management of complex wounds .It effective improves the wound healing by promoting nutrient supply to wounds with increase in tissue perfusion, Absorbing or removing exudate for the wounds promotes healing in a faster manner . It accelerates the formation of healthy granulation tissue and promotes definitive care and reassurance for the patients with chronic wounds . The main factor in managing negative pressure wound therapy is mainly on first clinical assessor in medical college . It involves assessing the function , troubleshoot findings early detection of any malfunction of the machine in daily and timely manner for preventing delay in wound healing . First assessor in every medical college for any patients in any department is the intern trainee posted for the follow up , initiation and management of any patient.

Hence this study focuses on assessing knowledge gap among intern on negative pressure wound therapy . Thereby improving the patient care and clinical outcome also improving the knowledge about NPWT on complex wounds among interns .

MATERIAL AND METHODS

A cross sectional study conducted among all the interns posted or completed internship rotational posting in department of general surgery , karpaga vinayaga institute of medical sciences and research centre .

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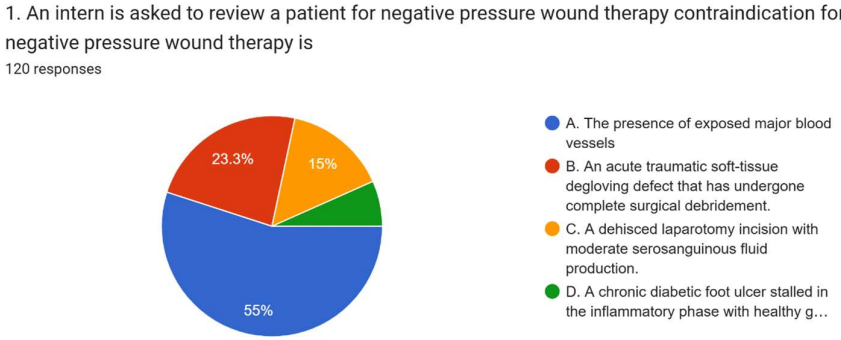
study conducted by one senior resident and one junior resident by providing online questions on assessing only knowledge on the negative pressure wound therapy among interns and supervised by associate professor and professor from the department of genral surgery.

Responses were collected through online form using google form and proceeded with data interpretation.

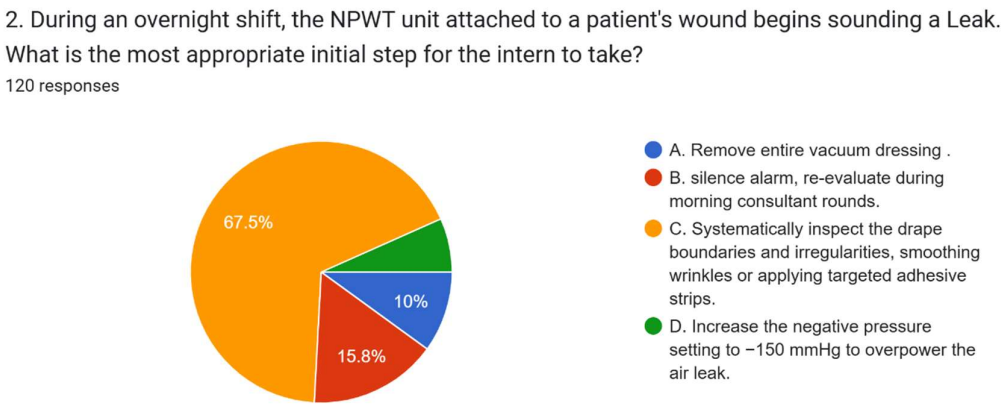
RESULT

A total of 120 interns participated in this study . Among the total participants majority of the interns are female with percentage of 65% . Remaining 35% are males . The majority mean age group participated in this study is around 23 ± 1 years of age . A total of 10 questions asked to participants (interns) and response obtained through google forms . Results were interpreted accordingly to assess knowledge of the interns and response were recorded in the pie chart form

questions 1 - 55% answered correctly for the npwt therapy contraindication provide interns knows when not to apply vacuum assisted closure dressing.



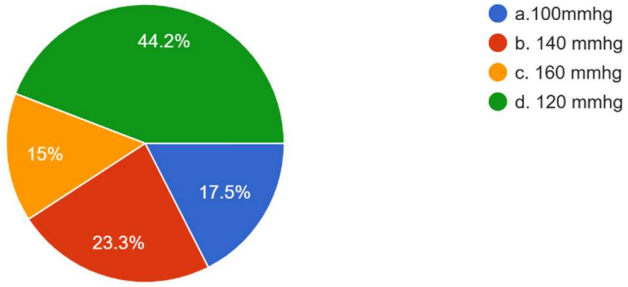
Question 2 - 67.5% answered correctly in the management of air leak in npwt treatment



Question 3 - only 44.2% knows about pressure to be maintained ideally

3. What is the ideal negative pressure should be maintained for patient with systolic blood pressure of 140 mmhg

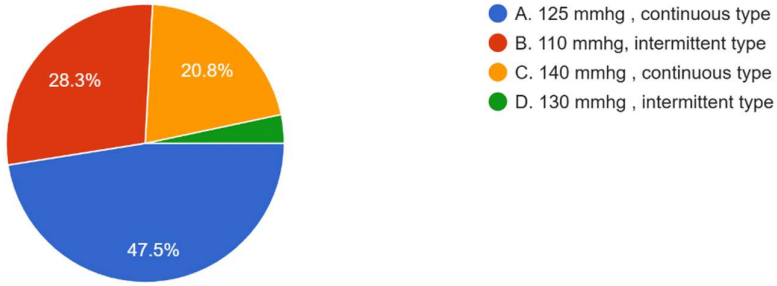
120 responses



Question 4 - 47.5% knows about management of exudative wound with negative pressure wound therapy.

4. A patient with an active exudative wound over lower limb what preference of pressure and vacuum therapy type should be used ?

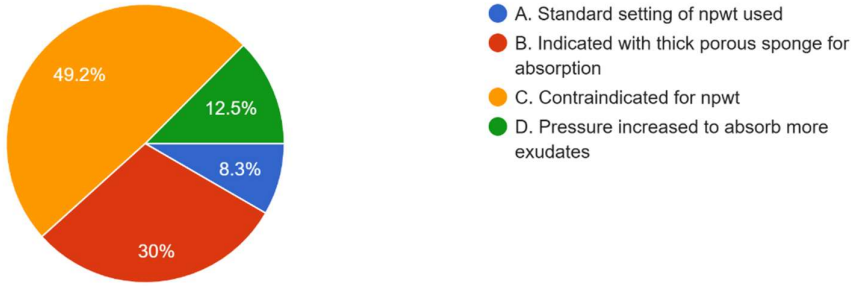
120 responses



Question 5 - 49.2% knows contraindication of vacuum assisted dressing

5. Post op laparotomy wound with high output fistula suggest line of management

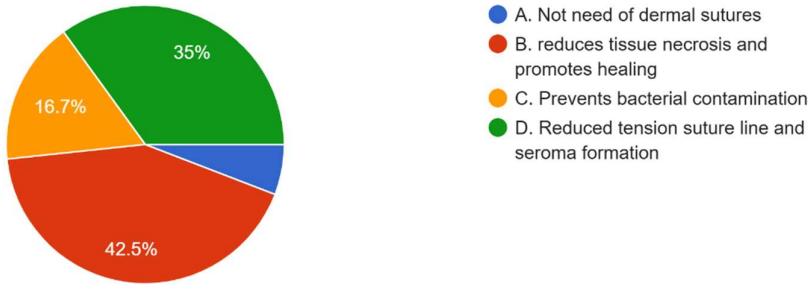
120 responses



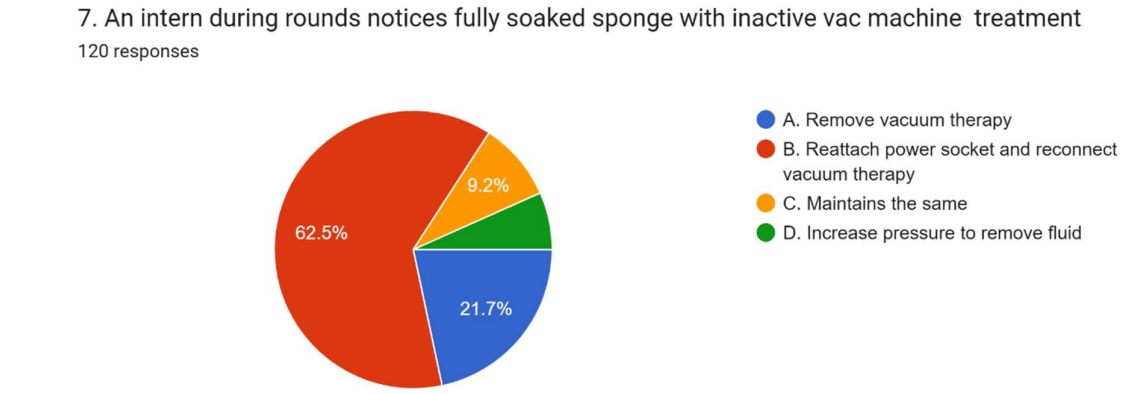
Question no 6 - 35% knows true role of prophylactic negative pressure wound therapy

6. primary benefits in the use of prophylactic negative pressure wound therapy

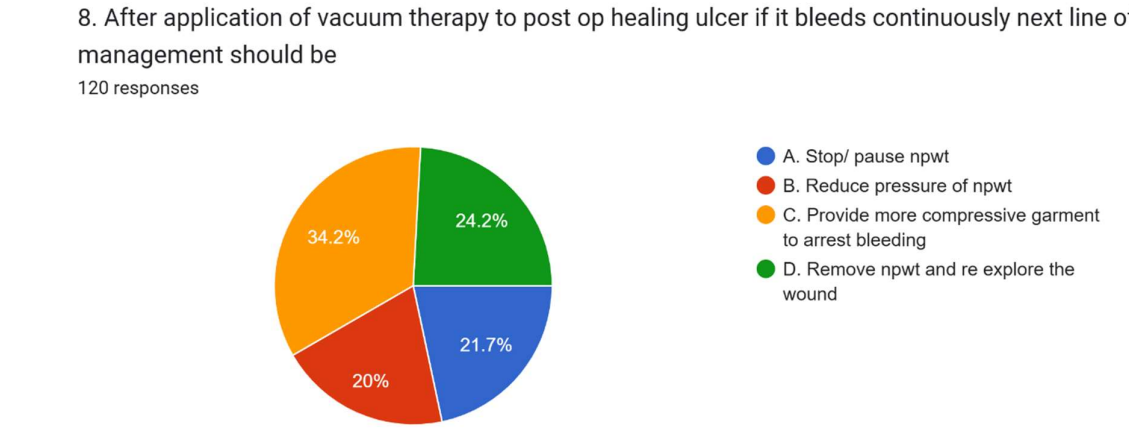
120 responses



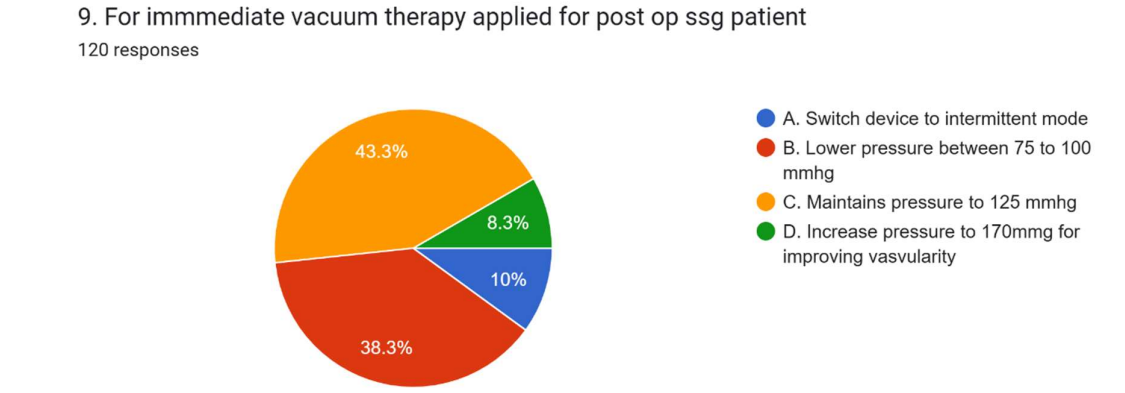
Question 7 - 62.5% majority answered wrongly , only 21.7 % knows about negative pressure wound therapy removal time.



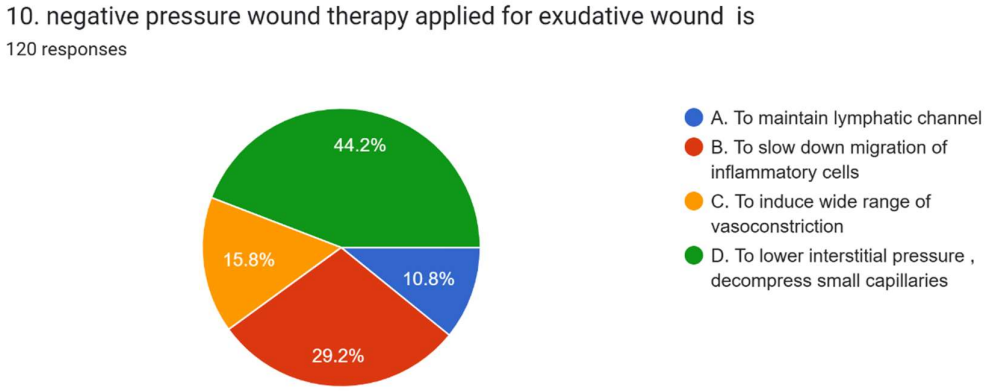
Question 8 - only 24.2% answered correctly about complication of vacuum therapy



Question 9 - only 38.3% answered correctly in the role of prophylactic vacuum therapy



Question 10 - 44.2% knows the pathophysiology of vacuum therapy



CONCLUSION

Among the total 120 interns majority of the interns knows about negative pressure therapy but they lack knowledge about the role of negative pressure wound therapy but knows how to maintain the minor problems causing ineffective treatment like air leak , etc . Lacks majorly in the assesement and knowledge of major complications caused by vacuum assisted dressing .Majorly interns knows about the practical aspects of negative pressure therapy in view of post application of management but lacks knowledge on the initiation of negative pressure wound therapy. In view of indication of negative pressure wound therapy and maintenance of adequte pressure in the negative pressure wound therapy interns lack knowledge but have a better knowledge on contraindications of negative pressure wound therapy. Prophylactic negative pressure wound therapy knowledge among interns are low. we conclude that negative pressure wound therapy knowledge among interns lack in the theorteical part but adequate in practical aspect of the application . We need to expertise the interns by showing more practical aspect of negative pressure wound therapy and its role among the patient with complex wounds and need more teaching module on both theoretical and practical aspect of negative pressure wound therapy among interns.

DISCUSSION

Role of negative pressure wound therapy in complex wounds is a vast subject involves advanced medical devices , Requires knowledge on initiation of negative pressure wound therapy , maintenance of vacuum assisted closure and knowledge on when to discontinue the negative pressure wound therapy is based on clinician experience and knowledge about the treatment of the chronic wounds . This study aims to improve interns knowledge on negative pressure wound therapy application with profound maintenance of the function of the device during treatment , to assess and prevent troubleshoot of the device . It improves patient outcome by prevention of the technical error leading to ineffectiveness of vacuum therapy.

Negative pressure wound therapy significantly reduce wound infection by increasing vascularity , removal of exudates and promotes wound healing for both acute infective wounds as well as chronic wounds with complex in nature .It also reduces patient hospital stay and reduces medical expenses drastically .

Negative pressure wound therapy requires air tight environment with negative suctioning for the wound . It is categorized into intermittent and continuous type based on suction pressure application time , minimum of systolic blood pressure + 20 mm hg of pressure should be maintained . The ideal pressure should be around 125 mm hg to promote better condition for wound healing and promoting formation of healthy granulation tissue .

Application of vacuum assisted closure dressing promotes better healing in the chronic wounds however for interns needs more knowledge , experience and technical skill on the initiation of vacuum therapy , maintenance of wound therapy and troubleshoot the device if any technical error occurs.

This study aims on improving the knowledge for the interns on negative pressure wound therapy which in turn improves patients outcome on the advanced wound with complexity.

successful treatment and providing cure for chronic and acute wounds needs a better understanding and approach tailored to individual patient which involves more than one clinician . It starts from interns initially ends up among the experienced clinician . Judgment on application of negative pressure wound therapy for any wounds should be initiated from first assessor interns and should always kept in mind regarding management of the wound .

Tailoring knowledge and improving advanced care on wound to intern improves patient care and efficiently reduces hospital stay . It also minimizes the disability succumb to the disease .hence knowledge about role of negative pressure wound therapy should be emphasized to interns to minimize the damage due to any wounds and prevention of disability to the patient.

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