INTRODUCTION
The use of fodder cutting machines also called "Toka" in local dialect is commonly used by farmers for fodder preparation for their cattle. The farmers cut the straw or hay into small pieces by using fodder cutting machines. They then fed their animal by mixing these pieces of hay or straw with other feeds. Into the cutting wheel, the fodder is fed by feed rollers and in the feeding rollers; the fingers get trapped together with the fodder. The roller further fed the hands into the rotating blades. This will result in crushing of fingers and hands between the rollers and at the end, the flywheel blades cut them. Fodder cutting machines are classified into two major types as manual fodder cutting machine and electric fodder cutting machine. The injuries caused by electric fodder cutting machines are common and severe. People of all ages and gender are affected by fodder cutting machines but however high number of injuries in male has been reported. Amputation of digits or the hand occurs in majority of these. The children mimic their parents by playing with the fodder cutting machine and their fingers and hands get trapped accidently. Fodder cutting machines injuries are leading causes of morbidity. The main goal in reducing this risk is quick and precise initial assessment. Most of these injuries are managed by orthopedic and plastic surgeons but the main problem occurs initially in the emergency ward where they are not seen by specialists. So the injury becomes mismanaged because these non-specialists might not understand the peculiarity of the injuries methodically. No sufficient data is available about injuries caused by fodder cutting machines in Pakistan. For this reason, this study was carried out to determine the injuries pattern caused by fodder cutting machine.

METHODOLOGY
This hospital based descriptive study was carried out in emergency and orthopedic department of Pir Abdul Qadir Jeelani Institute of Medical Sciences, Gambat, Khairpur, Sindh from 6th April 2018 to 29 January 2021. The research and ethical committee of the hospital approved the study. A written informed Consent was signed from all patients. The criteria of inclusion were all age patients of both the gender having fodder cutting machine injury presenting to the emergency or orthopedic department. The exclusion criteria were injuries of morbidity. The main goal in reducing this risk is quick and precise initial assessment. Most of these injuries are managed by orthopedic and plastic surgeons but the main problem occurs initially in the emergency ward where they are not seen by specialists. So the injury becomes mismanaged because these non-specialists might not understand the peculiarity of the injuries methodically. No sufficient data is available about injuries caused by fodder cutting machines in Pakistan. For this reason, this study was carried out to determine the injuries pattern caused by fodder cutting machine.

Objective: To find the pattern of injury caused by fodder cutting machine in Gambat region of Sindh province.
Methodology: This hospital based descriptive study was carried out in emergency and orthopedic department of Pir Abdul Qadir Jeelani Institute of Medical Sciences, Gambat, Khairpur, Sindh from 6th April 2018 to 29 January 2021. All the patients having fodder cutting machine injury were included and pattern of injury was determined. The data were recorded on the basis of age, gender, side of injury and severity of injury.
Results: Out of 193 patients, 133 (68.91%) were male and 60 (31.08%) female. Mean age was 18±6.3 years. Digits, palm and wrist, distal forearm, proximal forearm and arm had 66 (34.20%), 54 (27.98%), 39 (20.21%), 27 (13.99%), 7 (3.63%) injuries, respectively.
Conclusion: Fodder cutting machine injuries are common in our area. These injuries are responsible for lifelong handicap, especially in children under 15 years of age. (Rawal Med J 202:46:560-563).
Keywords: Hand injuries, fodder cutting machine, handicap.
other than the fodder cutting machine.
Standard protocols were used for resuscitation. For whole blood count and blood group determination, their blood samples were sent to the laboratory. For the involved or other needed parts, radiological examinations were done and blood transfusion was done according to the requirements. On empirical basis, antibiotics were given. Prophylaxis for tetanus was done. On clinical basis, the progress in general status of patient's health was monitored.
On the basis of priority, for emergency surgery, all the patients were prepared. Photographs were taken and recorded before and after operation. The data of injuries were recorded on the basis of age, gender, side of injury and severity of injury. Injury severity was determined by hand injury severity score.

Statistical Analysis: SPSS 17 was used for statistical analysis.

RESULTS
Out of 193 patients, 133 (68.91%) were male and 60(31.08%) female. Mean age was 18±6.3 years (range 5-55). According to the type of fodder cutting machine, 51 (26.43%) injuries were due to manual fodder cutting machine and 142 (73.57%) injuries were due to electric fodder cutting machine. Only upper limb had fodder cutting machine injuries.

Table 1. Distribution of fodder cutting machine injuries according to side involvement.

<table>
<thead>
<tr>
<th>Side</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right upper limb</td>
<td>117</td>
<td>60.62%</td>
</tr>
<tr>
<td>Left upper limb</td>
<td>76</td>
<td>39.38%</td>
</tr>
</tbody>
</table>

Table 2. Distribution of fodder cutting machine injuries according to site of injuries.

<table>
<thead>
<tr>
<th>Site of injuries</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Digits</td>
<td>66</td>
<td>34.20%</td>
</tr>
<tr>
<td>Palm and wrist</td>
<td>54</td>
<td>27.98%</td>
</tr>
<tr>
<td>Distal forearm</td>
<td>39</td>
<td>20.21%</td>
</tr>
<tr>
<td>Proximal forearm injuries</td>
<td>27</td>
<td>13.99%</td>
</tr>
<tr>
<td>Arm</td>
<td>7</td>
<td>3.63%</td>
</tr>
</tbody>
</table>

The right upper limb was observed to have 117 (60.62%) injuries as compared to left upper limb of 76 (39.38%) (Table 1). Based on injury site, digits, palm and wrist, distal forearm, proximal forearm and arm had 66 (34.20%), 54 (27.98%), 39 (20.21%), 27(13.99%), 7 (3.63%) injuries, respectively (Table 2). According to degree of severity (Hand Injury Severity Score), the number of patients were in mild, moderate, severe and major category were 37.82% (73), 49.74% (96), 10.36% (20) and 2.07% (4), respectively. Some of the photographs of fodder cutting machine injury are given in the Fig.

DISCUSSION
In agriculture sector of Pakistan, the major contributor in injuries are fodder cutting machine. Our findings are similar with another study where more injuries were in male than
female. The age range in our study was 5-15 years. A previous study reported more injuries in children. The children might have this high incidence because of lack of awareness, lack of safety measures and easily accessibility of children to these machines. According to the type of fodder cutting machine, 51 (26.43%) injuries were due to manual and 142 (73.57%) due to electric fodder cutting machine. An earlier study reported similar results. The digits, palm and wrist, distal forearm, proximal forearm and arm had most injuries. Hand and upper limb injuries related to agriculture are common ranging from 40% to 70% out of total injuries. Finger, radius and ulna amputation are the commonest traumatic amputation of upper limb caused by fodder cutting machines. Mahmood et al reported that in injuries related to agriculture, the upper limb was involved in majority of the cases. According to degree of severity, the patients had mild, moderate, severe and major category of injury. A study reported that majority of the fodder cutting injuries were mild to moderate. There is also need of training of paramedical staff working in the peripheral hospitals for proper handling of these injuries. The limitation of our study is that it only included patients who reported and were treated in two medical settings. Agricultural-related injuries may be much higher due to underreporting. Large multicenter studies conducted over a longer period of time are recommended to determine the true prevalence and impact of these injuries and impact on disability and mortality. Campaign for awareness should be started on print, electronic and social media to reduce these injuries.

CONCLUSION
Fodder cutting machine injuries are common in in Gambat region of Sind province. Children under 15 years of age had high number of injuries as compared other age group and these are responsible for lifelong handicap in children.

REFERENCES
