Direct stenting versus conventional stenting in ST-segment elevation myocardial infarction:
A systematic review.
Dr. Tehreem Fatima, Dr. Blain Taffesse, Dr. Sara Wallach [Capital Health Regional Medical Center, Trenton, NJ]

Introduction
ST-segment elevation myocardial infarction (STEMI) has a large thrombus burden. Conventional stenting involves balloon pre-dilation followed by stent placement, with this there is a higher chance of distal embolization, especially in STEMI. One emerging PCI technique is direct stenting without balloon pre-dilatation. This technique prevents distal embolization as it traps thrombus behind stent and theoretically is associated with better outcomes in STEMI patients. We sought to compare conventional stenting (CS) with DS in patients presenting with STEMI in a systematic review of randomized controlled trials [1,2,3].

Methods
Studies were identified from PubMed database. Only those studies were included that compared DS with CS in patients with acute myocardial infarction. Data were extracted and articles were critically appraised by two authors. The primary endpoint was injury to myocardium and overall prognosis.

Results
Six trials (n = 1100) met the eligibility criteria. Some studies mentioned significant improvement in left ventricular parameters, which was associated with favorable clinical outcomes [lower incidence of heart failure hospitalizations and mortality] as compared to CS, on the other hand, few studies mentioned no significant difference in outcomes between DS and CS.

<table>
<thead>
<tr>
<th>Study</th>
<th>Year of publication</th>
<th>Population size</th>
<th>Primary endpoint/ Outcomes</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Byung Gyu Kim, et al [1].</td>
<td>2022</td>
<td>72 DS: 34 CS: 38</td>
<td>Post-PCI index of IMR</td>
<td>No differences</td>
</tr>
</tbody>
</table>

Table 1: Summarizing results of all studies. T: total, DS: Direct stenting, CS: conventional stenting, TIMI: Thrombolysis in Myocardial Infarction, PPCI: primary percutaneous coronary intervention, IMR: index of microcirculatory resistance, CMR: cardiac magnetic resonance, TMPG: TIMI myocardial perfusion grade. cTFC: corrected TIMI frame count

Conclusion
DS is an interesting approach and more studies should be done to further investigate this technique.

References