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**Does Sarcopenia Increase the Risk of Needing a Stoma During Emergency Laparotomy?**

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**Aims:** Sarcopenia is a multisystem disorder which can be diagnosed clinically and radiologically. It is associated with impaired functional status and inferior perioperative outcomes, in particular increased mortality following emergency laparotomy. This study aimed to show whether sarcopenia, as defined by low psoas muscle area (PMA) on pre-operative CT, was associated with increased need for stoma formation.

**Methods:** A retrospective analysis of consecutive emergency general surgical laparotomies over a 3-year period. PMA was measured on a single pre-operative CT image at L3 and normalized to vertebral body area to create a psoas muscle index (PMI). New stoma formation and perioperative outcomes were recorded from patient records. Cases were split by the median value into high “non-sarcopenic” and low “sarcopenic” PMI groups.

**Results:** 299 patients underwent emergency laparotomy between 01/01/2016 and 31/12/2018. 46 patients (30.67%) in the low psoas index group required a stoma compared with 37 (24.83%) in the higher group ( $p = 0.159$ ). Survival was inferior in the sarcopenic group with a mean survival of 42 months compared to 48 months in the non-sarcopenic group ( $p = 0.032$ ). Median follow-up was 43 months. Patients in the sarcopenic group were significantly older (Mean age 68 compared to 54 in the non-sarcopenic group,  $p = <0.001$ ) but there was no difference in other baseline variables.

**Conclusions:** Sarcopenia does not significantly increase the risk of requiring a stoma during emergency laparotomy but does reduce survival.