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**UNIVERSIDADE ESTADUAL PAULISTA  
“JÚLIO DE MESQUITA FILHO”  
FACULDADE DE MEDICINA**

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**AVALIAÇÃO DE NETs EM PACIENTES PÓS-COVID COM  
TROMBOEMBOLISMO**

Dissertação apresentada ao Programa de Pós-Graduação em Patologia, da Faculdade de Medicina, Universidade Estadual Paulista “Júlio de Mesquita Filho”, Câmpus de Botucatu, para obtenção do título de Mestre em Ciências, área de concentração em Patologia.

Orientadora: Profa. Dra. Luciane Alarcão Dias-Melicio

**Botucatu  
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exemplo de resiliência e força.

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*“O sucesso nasce do querer, da determinação e persistência em se chegar a um objetivo.  
Mesmo não atingindo o alvo, quem busca e vence obstáculos, no mínimo fará coisas  
admiráveis.”*

*- Fernando Pessoa*



## Resumo

O SARS-CoV-2, vírus responsável pela pandemia de COVID-19 – síndrome respiratória aguda grave, ao infectar o indivíduo, induz a ativação das respostas imunológicas e inflamatória, aumentando a quantidade de células fagocíticas - principalmente neutrófilos (PMN), assim como os níveis de citocinas pró-inflamatórias, tendo como finalidade o enfrentamento viral. No entanto, quando desreguladas, essas citocinas podem causar extensa lesão tecidual devido a indução de uma tempestade inflamatória, podendo levar o indivíduo à óbito. Acredita-se que a liberação das redes extracelulares de neutrófilos (NETs), mecanismo de eliminação de patógenos, estejam relacionadas com o agravamento da doença e formação de trombos. Estudos já demonstraram um aumento na concentração de marcadores específicos de NETs em amostras séricas e purificadas de PMN, assim como em autópsias de indivíduos acometidos pela COVID-19, indicando correlação de severidade e complicações no quadro clínico dos pacientes. Casos de tromboembolismo também se encontraram aumentados na COVID-19, mesmo naqueles indivíduos recebendo tromboprolifaxia e até mesmo em momentos posteriores à infecção aguda pelo SARS-CoV-2, associando a desregulação do estado inflamatório, a ativação plaquetária e o sistema complemento induzidos pelas NETs na COVID-19. Assim, este estudo teve como objetivo avaliar a liberação de NETs por neutrófilos humanos, *in vitro*, de pacientes pós-COVID que apresentaram ou não eventos tromboembólicos em decorrência da doença. Nossos resultados demonstram que pacientes pós-COVID, que sofreram eventos tromboembólicos devido a COVID-19, liberaram níveis mais elevados de NETs, além de apresentarem diferenças na conformação das redes. Esses resultados sugerem o importante papel modulador das NETs nos processos imunológicos, inflamatórios e vasculares devido à sua presença persistente em pacientes pós-COVID.

**Palavras-chave:** COVID-19, neutrófilos, NETs (redes extracelulares de neutrófilos), imunotrombose, pós-COVID.

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