

# Perbedaan ekspresi cyclin D1 pada kanker nasofaring stadium lanjut berdasarkan respon pengobatan = The Difference of cyclin D1 expression in advanced stage nasopharyngeal cancer based on treatment response

Rahmat Cahyanur, author

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## Abstrak

Latar belakang: Kanker nasofaring (KNF) merupakan kanker leher kepala terbanyak di Indonesia (28,4%) dan sebagian besar terdiagnosis pada stadium lanjut. Modalitas pengobatan pada kasus KNF stadium lanjut adalah kemoterapi dan radioterapi. Namun, pada stadium sama, respon terhadap pengobatan memiliki hasil berbeda dikarenakan adanya perbedaan karakteristik biologi molekular. Cyclin D1 adalah protein yang berperan dalam siklus sel. Peningkatan ekspresi cyclin D1 akan mempercepat proliferasi. Penelitian ini ingin mengetahui tingkat ekspresi cyclin D1 terhadap respons kemoterapi. Hal tersebut berdasarkan perbedaan hasil penelitian terdahulu. Data ekspresi cyclin D1 pada KNF di Indonesia belum ada, sehingga perlu penelitian ekspresi cyclin D1 pada KNF serta hubungannya berdasarkan respons pengobatan.

Metode: Penelitian ini menggunakan studi kohort retrospektif dengan subjek merupakan pasien KNF yang berobat di RSCM pada kurun waktu 2015-2018. Gambaran radiologi sebelum dan sesudah pengobatan ditinjau ulang berdasarkan kriteria RECIST. Pewarnaan imunohistokimia cyclin D1 menggunakan antibodi monoklonal cyclin D1 Novocastra<sup>TM</sup> dengan teknik pengambilan antigen suhu tinggi dan intensitasnya dinilai dengan H-skor menurut kriteria Allred.

Hasil: Terdapat 16 subjek (51,6%) dengan ekspresi cyclin D1 positif dan 15 subjek (48,4%) dengan ekspresi negatif. Peneliti menemukan bahwa ekspresi cyclin memiliki perbedaan rerata yang bermakna antara kelompok subjek yang respons (rerata  $116,24 \pm 57,80$ ) dan tidak respons (rerata  $77,97 \pm 45,27$ ) terhadap pengobatan ( $p = 0,048$ ).

Simpulan: Penelitian ini menunjukkan ekspresi cyclin D1 yang kuat pada kelompok dengan respons pengobatan yang baik.

.....Background: Nasopharyngeal cancer (NPC) is the most type of head and neck cancer in Indonesia (28.4%) and mostly diagnosed at advanced stage. Treatment of this stage is chemotherapy and radiotherapy. However, patients with the same stage of disease had different treatment response probably due to different characteristics of molecular biology. Cyclin D1 is a protein involved in cell cycle, which the overexpression of it will fasten proliferation. Studies regarding the association of cyclin D1 expression and chemotherapy response have shown a different result. In Indonesia, data of cyclin D1 expression of NPC do not yet exist. This study aimed to examine the proportion of cyclin D1 in NPC and its association with treatment response.

Methods: A retrospective cohort study was conducted using subjects of NPC patients at Cipto Mangunkusumo Hospital from 2015 until 2018. The response of treatment was reviewed based on RECIST criteria. The technique used for cyclin D1 immunohistochemistry staining was antigen retrieval methods, using cyclin D1 Novocastra<sup>TM</sup> monoclonal antibody and the intensity was assessed based on Allred criteria. Results: Sixteen subjects (51.6%) had positive expression of cyclin D1 and 15 subjects (48.4%) had negative expression. The researchers found that cyclin D1 expression had significant mean differences between

groups of subjects who responded (mean  $\pm$  SD = 116.24  $\pm$  57.80) and did not respond (mean  $\pm$  SD = 77.97  $\pm$  45.27) to treatment (p = 0.048).

Conclusion: This study suggests that higher expression of cyclin D1 is associated with a good treatment response in NPC patients.