



KANKER PAYUDARA

MEMAHAMI, MENCEGAH, DAN MENGHADAPINYA



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KATA PENGANTAR

Puji syukur ke hadirat Tuhan Yang Maha Esa atas limpahan rahmat dan karunia-Nya sehingga buku yang berjudul, “Kanker Payudara: Memahami, Mencegah, dan Menghadapinya” dapat diselesaikan dengan baik. Buku ini lahir dari keprihatinan mendalam terhadap meningkatnya kasus kanker payudara di seluruh dunia, termasuk di Indonesia, yang tidak hanya menjadi ancaman serius bagi kesehatan tetapi juga menimbulkan dampak psikologis, sosial, dan ekonomi yang luas.

Melalui buku ini, kami ingin menyampaikan informasi yang lengkap dan komprehensif mengenai berbagai aspek terkait kanker payudara, mulai dari definisi, jenis-jenisnya, hingga faktor risiko yang perlu diwaspadai. Buku ini juga membahas langkah-langkah penting dalam pencegahan, seperti pola hidup sehat, deteksi dini melalui SADARI, serta peran skrining klinis dan mamografi. Semua informasi disajikan dengan harapan dapat meningkatkan kesadaran dan pemahaman masyarakat tentang pentingnya menjaga kesehatan payudara.

Kami percaya bahwa edukasi adalah kunci dalam melawan kanker payudara. Dengan pengetahuan yang memadai, setiap individu dapat mengambil langkah preventif yang tepat, mendukung mereka yang sedang berjuang melawan penyakit ini, dan bahkan menjadi agen perubahan dalam komunitasnya. Karena itu, buku ini tidak hanya

ditujukan kepada mereka yang memiliki risiko atau sedang berhadapan dengan kanker payudara, tetapi juga kepada keluarga, teman, dan tenaga medis yang mendukung mereka.

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Penulis

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1

MENGAPA BUKU INI DITULIS?

A. URGENSI PENGETAHUAN TENTANG KANKER PAYUDARA

1. Statistik Global dan Lokal Tentang Kanker Payudara

Kanker payudara merupakan salah satu penyakit yang menjadi perhatian utama di seluruh dunia. Penyakit ini tidak hanya memengaruhi kesehatan fisik tetapi juga aspek psikologis, sosial, dan ekonomi para penderitanya. Pengetahuan tentang kanker payudara menjadi sangat penting karena deteksi dini terbukti mampu meningkatkan peluang kesembuhan secara signifikan. Ketidaktahuan masyarakat tentang gejala awal dan faktor risikonya sering kali menyebabkan diagnosis dilakukan pada stadium lanjut, di mana pengobatan menjadi lebih sulit dan tingkat kelangsungan hidup menurun drastis. Edukasi yang komprehensif tentang penyakit ini tidak hanya dapat menyelamatkan nyawa tetapi juga memberikan pengaruh positif dalam menciptakan masyarakat yang lebih sadar akan pentingnya kesehatan.

Statistik global menunjukkan bahwa kanker payudara adalah jenis kanker paling umum pada wanita, dengan lebih dari 2 juta kasus baru dilaporkan setiap tahun. Menurut data dari Organisasi Kesehatan

2

PENCEGAHAN KANKER PAYUDARA

A. GAYA HIDUP SEHAT

1. Pentingnya Pola Makan Sehat

Pola makan sehat memiliki peran kunci dalam mencegah berbagai penyakit, termasuk kanker payudara. Nutrisi yang tepat dapat membantu menjaga keseimbangan hormon, memperkuat sistem kekebalan tubuh, dan melindungi sel-sel tubuh dari kerusakan akibat radikal bebas. Dalam konteks kanker payudara, pola makan yang sehat berkontribusi dalam menurunkan risiko obesitas, yang merupakan salah satu faktor risiko utama, terutama pada wanita pascamenopause. Lemak tubuh yang berlebih dapat meningkatkan kadar hormon estrogen dan insulin, menciptakan lingkungan yang mendukung pertumbuhan sel-sel kanker. Oleh karena itu, mengatur pola makan untuk menjaga berat badan yang sehat menjadi langkah penting dalam pencegahan.

Beberapa jenis makanan diketahui memiliki efek perlindungan terhadap kanker payudara. Konsumsi tinggi sayuran dan buah-buahan, khususnya yang kaya antioksidan seperti brokoli, bayam, berry, dan tomat, dapat membantu melawan kerusakan sel akibat radikal bebas.

3

TEKNOLOGI TERBARU UNTUK MENDETEKSI KANKER PAYUDARA

A. KANKER PAYUDARA DAN RISIKO KEMATIAN YANG SIGNIFIKAN

Kanker payudara masih menjadi jenis kanker paling umum di dunia. Namun, cara pandang terhadap kanker payudara telah mengalami transformasi yang signifikan dalam beberapa dekade terakhir, sebagai akibat dari karakterisasi ekstensif dari ciri-ciri molekulernya. Ini termasuk identifikasi penanda imunohistokimia, seperti reseptor estrogen (ER) dan reseptor progesteron (PR), reseptor faktor pertumbuhan epidermal manusia 2 (HER2) dan protein penanda proliferasi Ki-67. Selain itu, penanda genom, termasuk yang terkait dengan BRCA1, BRCA2 dan fosfatidilinositol-4,5-bisfosfat 3-kinase, *catalytic* subunit alpha (PIK3CA), telah diidentifikasi. Selain itu, keberadaan limfosit yang menginfiltrasi tumor dan PD-L1, suatu penanda kekebalan, telah diamati pada beberapa pasien dengan kanker payudara (Loibl *et al.*, 2021).

Kanker payudara adalah bentuk kanker yang paling umum di kalangan wanita dan merupakan penyumbang kematian yang signifikan di antara mereka (Momenimovahed & Salehiniya, 2019). Kanker

4

HASIL DAN PEMBAHASAN

A. DATASET

Tahap pengolahan data dilakukan dengan mengonversikan ekstensi dari dataset ke ekstensi.csv. Dataset WBCD yang diperoleh memiliki format data dalam bentuk.data. Dataset tersebut kemudian diubah ke dalam format file (.csv). agar lebih mudah dibaca atau dipahami. Dataset yang telah diubah ke dalam format.csv ditunjukkan pada Gambar 4.1.

	Sample code number	Clump Thickness	Uniformity of Cell Size	Uniformity of Cell Shape	Marginal Adhesion	Single Epithelial Cell Size	Bare Nuclei	Bland Chromatin	Normal Nucleoli	Mitoses	Class
0	1000025	5	1	1	1	2	1	3	1	1	2
1	1002945	5	4	4	5	7	10	3	2	1	2
2	1015425	3	1	1	1	2	2	3	1	1	2
3	1016277	6	8	8	1	3	4	3	7	1	2
4	1017023	4	1	1	3	2	1	3	1	1	2
...	...	...	...	...	...	...	...	...	...	...	...
694	776715	3	1	1	1	3	2	1	1	1	2
695	841769	2	1	1	1	2	1	1	1	1	2
696	888820	5	10	10	3	7	3	8	10	2	4
697	897471	4	8	6	4	3	4	10	6	1	4
698	897471	4	8	8	5	4	5	10	4	1	4

699 rows x 11 columns

Gambar 4.1 Tampilan dataset dengan format.csv

5

KESIMPULAN

Kesimpulan dari penelitian ini menunjukkan bahwa penerapan algoritma Relief untuk seleksi fitur dan KNN (*K-Nearest Neighbors*) untuk imputasi nilai yang hilang pada *dataset Wisconsin Breast Cancer* (WBC) memberikan kontribusi yang signifikan terhadap peningkatan akurasi model prediksi yang dibangun menggunakan algoritma C4.5. Dalam penelitian ini, algoritma Relief berfungsi untuk mengidentifikasi dan memilih fitur-fitur penting yang memiliki pengaruh besar terhadap klasifikasi data kanker payudara. Sementara itu, algoritma KNN digunakan untuk mengimputasi nilai-nilai yang hilang dalam dataset, yang sering kali dapat mengurangi akurasi jika tidak ditangani dengan baik. Kombinasi kedua algoritma ini menghasilkan akurasi prediksi yang tinggi, yakni 98.57%, yang menunjukkan bahwa metode ini sangat efektif dalam membangun model klasifikasi yang akurat.

Hasil penelitian ini juga memperlihatkan bahwa pengaplikasian algoritma ini pada dataset WBC memberikan kontribusi besar dalam upaya pengklasifikasian jenis kanker payudara. Proses seleksi fitur menggunakan Relief membantu dalam mengurangi dimensi data, yang tidak hanya mempercepat proses pelatihan model, tetapi juga

EPILOG

Kanker payudara adalah ancaman kesehatan yang serius, namun dapat dikelola dan dicegah jika terdeteksi sejak dini. Dalam perjalanan memahami penyakit ini, kita telah mempelajari banyak hal: mulai dari definisi dan jenis-jenis kanker payudara hingga faktor risiko seperti genetik, gaya hidup, dan paparan lingkungan. Kami juga telah mengulas pentingnya pola makan sehat, aktivitas fisik teratur, serta deteksi dini melalui pemeriksaan sendiri payudara (SADARI), skrining klinis, dan mamografi. Semua ini adalah elemen kunci dalam pencegahan dan penanganan kanker payudara.

Selain itu, kami juga menekankan peran kesadaran individu dalam mengenali tubuh sendiri dan pentingnya dukungan keluarga serta komunitas dalam menghadapi tantangan kesehatan. Kanker payudara bukan hanya masalah individu, tetapi juga masalah yang menyentuh masyarakat secara keseluruhan, sehingga upaya kolektif diperlukan untuk meningkatkan kesadaran dan akses terhadap informasi serta fasilitas kesehatan.

Menghadapi kanker payudara, baik sebagai pasien, keluarga, atau pendukung, adalah perjalanan yang membutuhkan kekuatan fisik dan mental. Namun, ingatlah bahwa Anda tidak sendirian. Kemajuan dalam ilmu pengetahuan dan teknologi medis telah memberikan harapan besar bagi pasien kanker payudara. Dengan deteksi dini, pengobatan

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